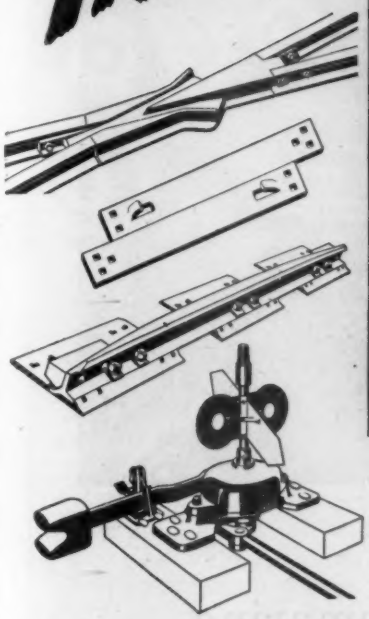
FEBRUARY 17, 1945

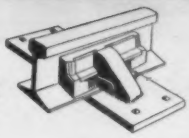
Railway Age

Founded in 1856

Published weekly by Simmons-Boardman Publishing Corporation, 1309 Noble Street, Philadelphia, Pa. Entered as second class matter, January 4, 1933, at the Post Office at Philadelphia, Pa., under the act of March 3, 1879. Subscription price $6.00 for one year U. S. and Canada. Single copies, 25 cents each. Vol. 118, No. 7.

If it's for TRACK





Bethlehem makes it

BETHLEHEM TRACK PRODUCTS

Bolts and Nuts — *Frogs* — *Crossings*
Gage Rods — *Joint Bars* — *Guard Rails*
Rail Braces — *Spikes* — *Rails*
Switches — *Tie Plates* — *Switch Stands*

BETHLEHEM STEEL

Bethlehem manufactures every major item of trackwork and accessories for both standard and narrow-gage railroads.

Whether you're looking for spikes or rails . . . bolts or gage rods . . . frogs or crossings . . . Bethlehem can furnish them. Whether your order is the simplest type of switch or a huge, movable-point double-slip crossing, it can be fabricated for you in one of the Bethlehem shops. If you want a complicated layout for a yard or terminal, Bethlehem will furnish one that has been pre-assembled to be sure everything fits.

That means undivided responsibility. It means that you can get your track equipment from *one* manufacturer, instead of shopping around for tie plates here, switch stands there. And when you buy from Bethlehem, you're getting up-to-the-minute technical service that's backed by many years of association with the railroad industry.

Bethlehem's engineering staff will be glad to work closely with you whenever you're figuring replacements or new layouts . . . either standard or special.

OTHER BETHLEHEM PRODUCTS FOR THE RAILROADS—Alloy Steels . . . Boiler and Firebox Plates . . . Bridges . . . Freight Cars . . . Locomotive Forgings . . . Mayari R (high-strength, low-alloy steel) . . . Transmission-Line Towers . . . Tool Steels . . . Tubular Products . . . Wheels and Axles

make the

GREEN LIGHT

mean what it says!

Peace coming or war continuing, you will have to meet schedules with the same locomotives. Open blocks and green lights can only mean what they say if your locomotives are kept free from feedwater troubles . . . able to carry on without sluggishness caused by foaming, or time out for boiler repairs directly due to bad water.

Untreated water . . . even though it is crystal clear to the naked eye . . . often causes scale and corrosion in the locomotive boiler, with subsequent shoppings for boiler repairs.

Relief from troublesome feedwater and expensive boiler maintenance, incident thereto, has been found by the many railroads who employ Dearborn Water Treatment and Service.

Dearborn engineers make a study of each water station in co-operation with the road's own water chemists, or independently, and advise on water treatment problems. Chemical formulas are developed to neutralize scale forming characteristics at each water station and combined with anti-foam to overcome carry-over.

The Dearborn engineer in your vicinity will be glad to assist you in keeping your locomotives going ahead on the green light, and ready to cope with operating conditions as you find them in 1945.

DEARBORN CHEMICAL COMPANY

310 S. Michigan Ave., Chicago 4
205 E. 42nd St., New York
807-15 Mateo St., Los Angeles
2454 Dundas St., West, Toronto

Dearborn

TRADE MARK REGISTERED

BOILER WATER TREATMENT AND SERVICE

Assignability Unlimited!

You can profitably utilize all of the Alco-G.E. road switcher's 95% average availability—it has the versatility to handle all three railroad jobs: road work, transfer service, and switching.

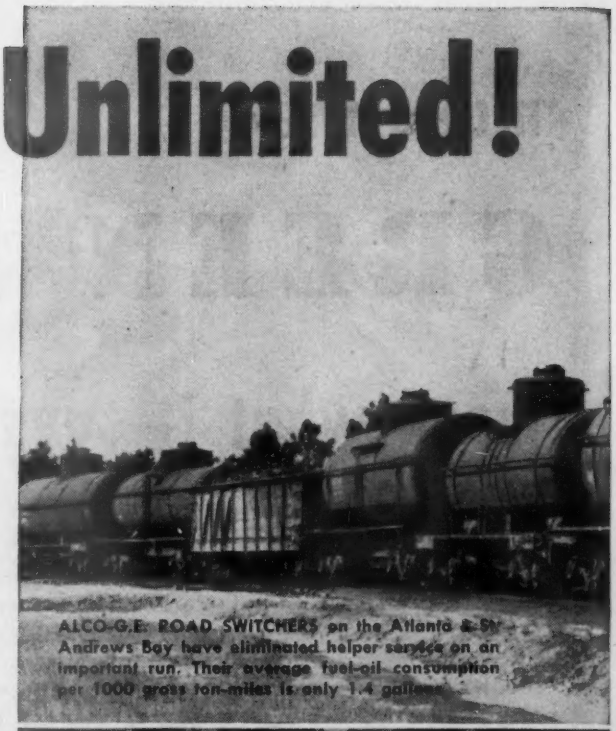
● There's almost no limit to the earning capacity of our 1000-hp road and switching locomotive. To the inherent high availability of diesel-electrics, Alco-G.E. has given to this unit an all-round versatility that enables you to keep it busy around the clock, capturing the profit that results from steady employment.

On one road, the all-purpose usefulness of four of these combination units was responsible for the release of seven steam locomotives and the speeding up of freight schedules —despite heavily increased traffic. On another road, where three of these units are assigned to switching work between road trips, annual gross savings amount to more than $90,000—a 33 per-cent return on the investment.

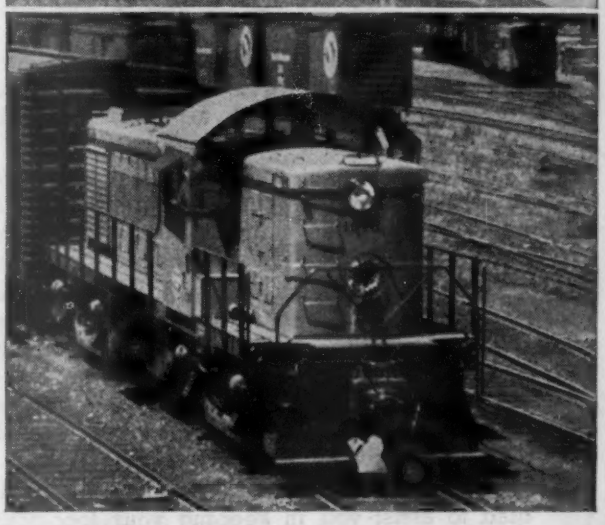
For switching, you'll find that it is equipped to give full power at all speeds, that it has almost unlimited visibility, and the built-in reliability that's characteristic of all Alco-G.E. diesel-electrics. It meets road requirements because it has the additional features of space for train-heating facilities, speed up to 60 mph, and the riding qualities of spring-supported, swing-bolster trucks having ample distance between centers for flexibility.

Because you can assign this diesel-electric to switching during the night and meeting road schedules during the day, you can realize a higher net return on your investment than you can from a single-purpose locomotive. Moreover, it has the greatest opportunity to effect the savings you'll need to meet the severe competition for postwar traffic.

Whether your plans to meet this competition call for diesel-electric, electric, or steam locomotives, we invite you to call in our engineers to work with your own on a motive-power survey. Their recommendations will be impartial—we build all three types of motive power.



ALCO-G.E. ROAD SWITCHERS on the Atlanta & St. Andrews Bay have eliminated helper service on an important run. Their average fuel-oil consumption per 1000 gross ton-miles is only 1.4 gallons.



IN A MIDWESTERN YARD, each of two 1000-hp Alco-G.E. units handled as many cars in 24 hours as released motive power handled in 28 hours.

Rock Island

On a 498-mile section of the Rock Island, four road switchers do the complete job—switching, accumulating trains, and hauling them on the road.

Kansas City So.

Four of these 1000-hp units on the Kansas City Southern are reducing fuel costs and speeding freight movements by cutting terminal-operation time.

Alco

GE

AMERICAN LOCOMOTIVE and

HOW ONE ROAD UTILIZES THE VERSATILITY OF ALCO-G.E. ROAD SWITCHERS

6:30 P.M. to 4 A.M.—both locomotives, in tandem, haul 3200-ton trains over the one per-cent ruling grade of a 182-mile daily round-trip run.

4 A.M. to 3 P.M.—one of the locomotives handles local switching, and transfer work between the road's terminals and a connecting railroad.

● On a southern line where two 1000-hp Alco-G.E. road switchers are doing double duty—road work and switching—there has been no need for additional motive power despite a 100 per-cent increase in traffic since they were placed in service. Their versatility enables this road to keep them busy at least 18 hours a day producing monthly savings of $3787 in road service and $3776 in switching.

9 A.M. to 5 P.M.—In addition to switching work at one of the yards, the other locomotive speeds passenger trains to a local resort during the summer.

At nearly passenger-train speeds, two of these Alaska Railroad units are hauling combined freight and passenger trains where two separate trains were formerly required.

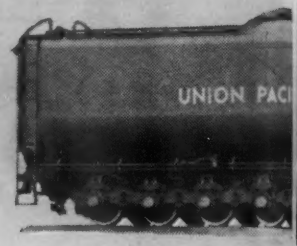
On the Susquehanna, four of these versatile units are making substantial reductions in operating cost. Their daily inspection and refueling takes 20 minutes.

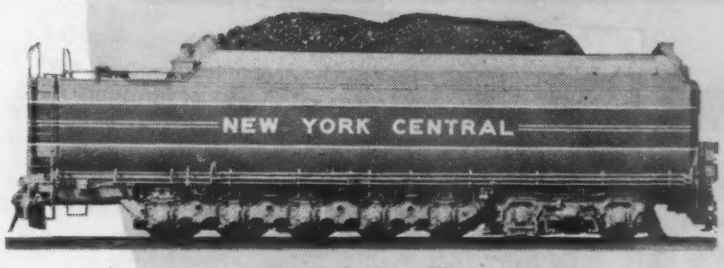
GENERAL ELECTRIC

Check the Proven

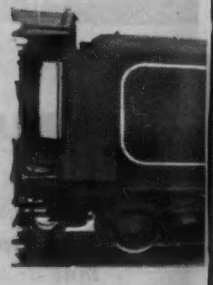
25,000 Gallons Water—27 Tons Fuel

23,500 Gallons Water
—25 Tons Fuel

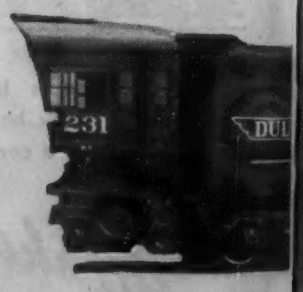




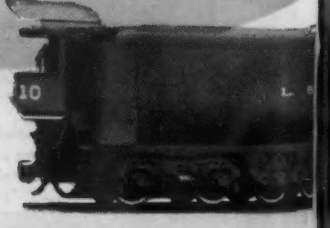
17,500 Gallons Water
—43 Tons Fuel



25,000 Gallons Water
—6530 Gallons Fuel

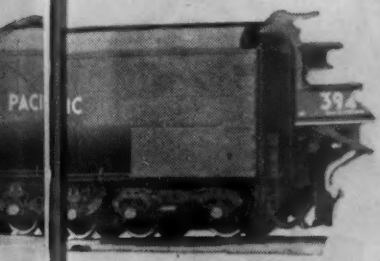


25,000 Gallons Water—28 Tons Fuel



GENERAL STEEL

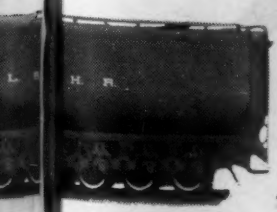
Advantages of Building Your Tenders with COMMONWEALTH TENDER BEDS



25,000 Gallons Water
—28 Tons Fuel

23,000 Gallons Water
—21 Tons Fuel

25,000 Gallons Water
—26 Tons Fuel

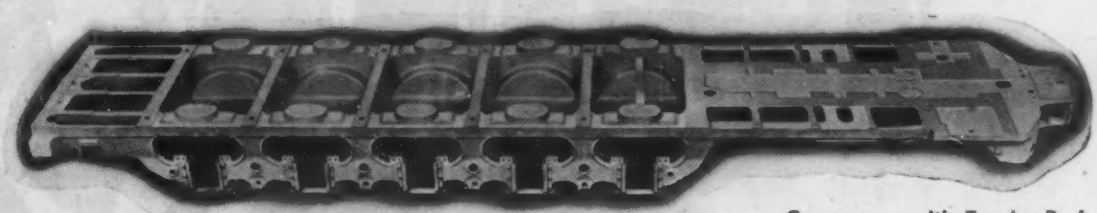


23,000 Gallons Water—21 Tons Fuel

To meet the needs of today and the competition of tomorrow, modern, large-capacity tenders reduce the number of stops and delays for water and fuel. The outstanding advantages of tenders built with TENDER BEDS are:

- ✔ A reduction in tender weight per gallon capacity
- ✔ Lighter loads per wheel with a more uniform distribution of weight at rail
- ✔ Greater water and fuel capacity without exceeding present limits of height, width, and length of tender
- ✔ Lower center of gravity, allowing use of larger diameter wheels
- ✔ Less maintenance, due to the simplicity of the design

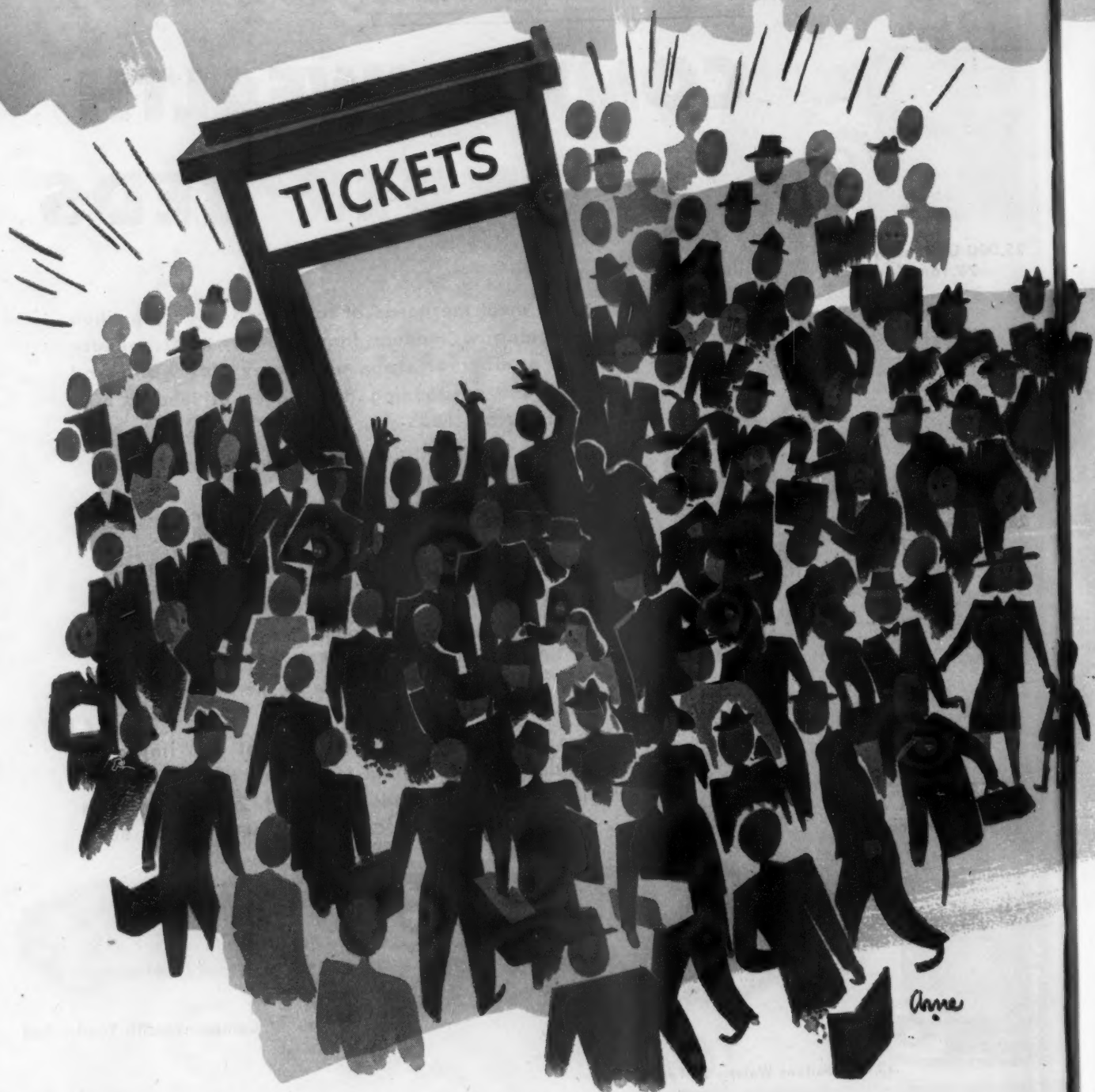
Proof of the wide acceptance of this improved tender design is found in the fact that from 1939-1945, eight railroads equipped 260 locomotives with tenders having COMMONWEALTH TENDER BEDS.



Commonwealth Tender Bed

CASTINGS EDDYSTONE, PA.
GRANITE CITY, ILL.

HOW TO Turn Wartime



Sell-Outs

Into Peacetime Profits

● Today, gas-rationed, travel-hungry America stampedes to the trains. Despite all the power of press and radio, all the inconveniences of wartime travel . . . still they come.

After V-Day, this pent-up, compelling urge to travel will still exist, and only with *more* comfort, *greater* luxury, and *better* service will they travel by rail.

a.c.f. has many convincing postwar sales arguments for traveling by train right now. Persuasive arguments for leaving the family car at home. And equally powerful arguments for traveling *by rail* rather than by other available public carriers.

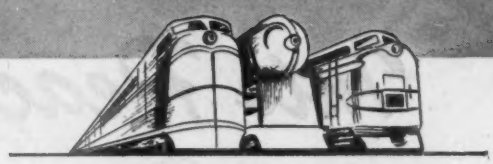
***Protect* your *postwar passenger traffic by "green lighting" your new construction* NOW.**

a.c.f. AMERICAN CAR AND FOUNDRY COMPANY

NEW YORK · CHICAGO · ST. LOUIS · CLEVELAND · WASHINGTON
PHILADELPHIA · PITTSBURGH · ST. PAUL · SAN FRANCISCO

WHATEVER a.c.f. BUILDS—IT IS KNOWN TO BUILD WELL!

AMERICA'S SPEEDIEST STREAMLINED TRAINS



RIDE ON HOUDAILLE SHOCK ABSORBERS

● First ten years ago . . . first *today*. That's the Houdaille* record for developing special railroad hydraulic shock absorbers to insure superb riding comfort . . . stability . . . *safety*.

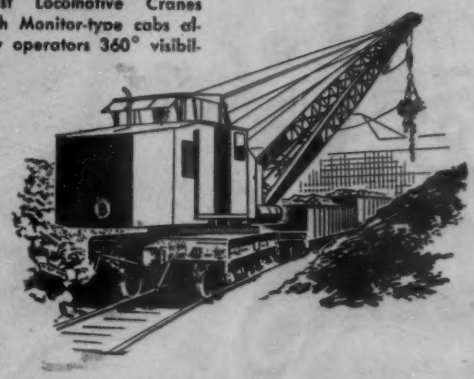
America's first lightweight, high-speed train pioneered the use of double-acting Houdaille instruments in November, 1934. Today Houdaille is stabilizing and cushioning the operation of the most famous streamlined trains in the country.

Improved Houdaille railroad instruments for vertical, lateral and journal box control are now ready for post-war plans. Ask us about them.

HOUDE ENGINEERING DIVISION OF
HOUDAILLE-HERSHEY CORPORATION
MAKERS OF HYDRAULIC CONTROLS
Buffalo 11, New York

*Pronounced—Hoo-dye

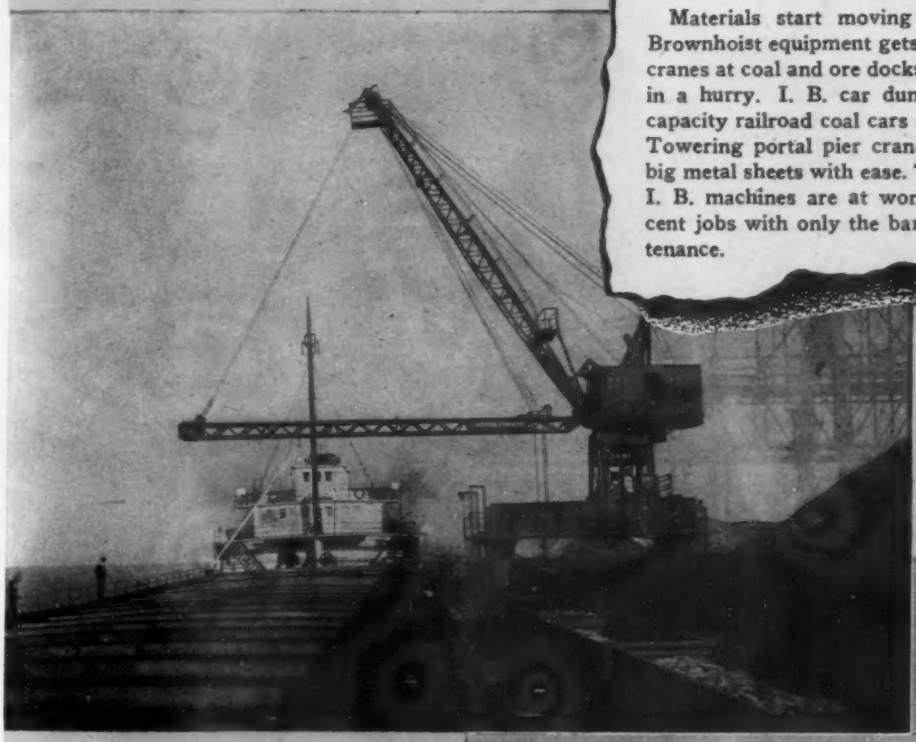
Below: Industrial Brownhoist Locomotive Cranes with Monitor-type cabs allow operators 360° visibility.



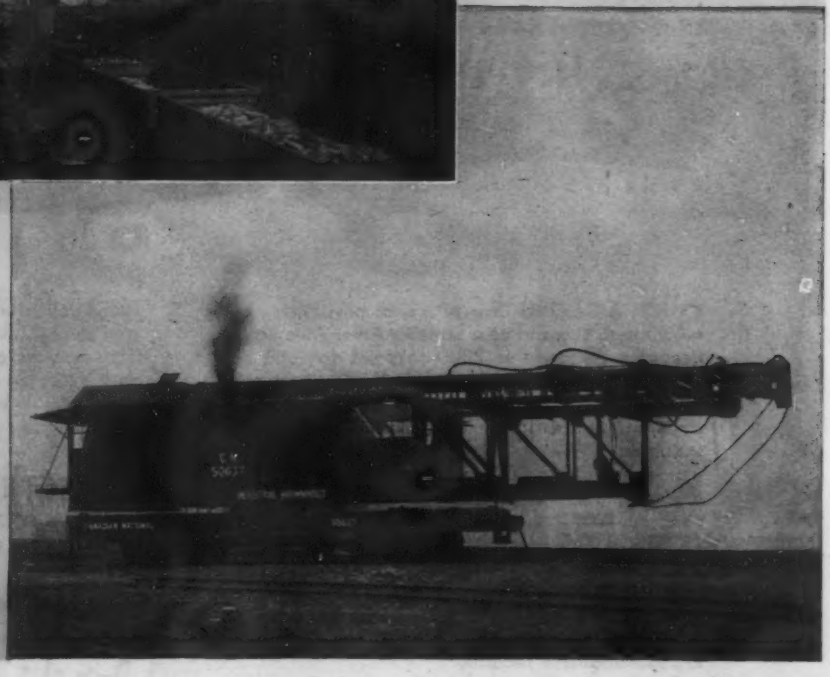
BIG EQUIPMENT FOR BIG JOBS

INDUSTRIAL BROWNHOIST EQUIPMENT SAVES MANPOWER, CUTS HANDLING COST

Materials start moving fast when Industrial Brownhoist equipment gets on the job. I.B. bridge cranes at coal and ore docks load and unload boats in a hurry. I. B. car dumpers pick up 120 ton capacity railroad coal cars and gondolas like toys. Towering portal pier cranes at shipyards handle big metal sheets with ease. Throughout the nation, I. B. machines are at work performing magnificent jobs with only the barest minimum of maintenance.

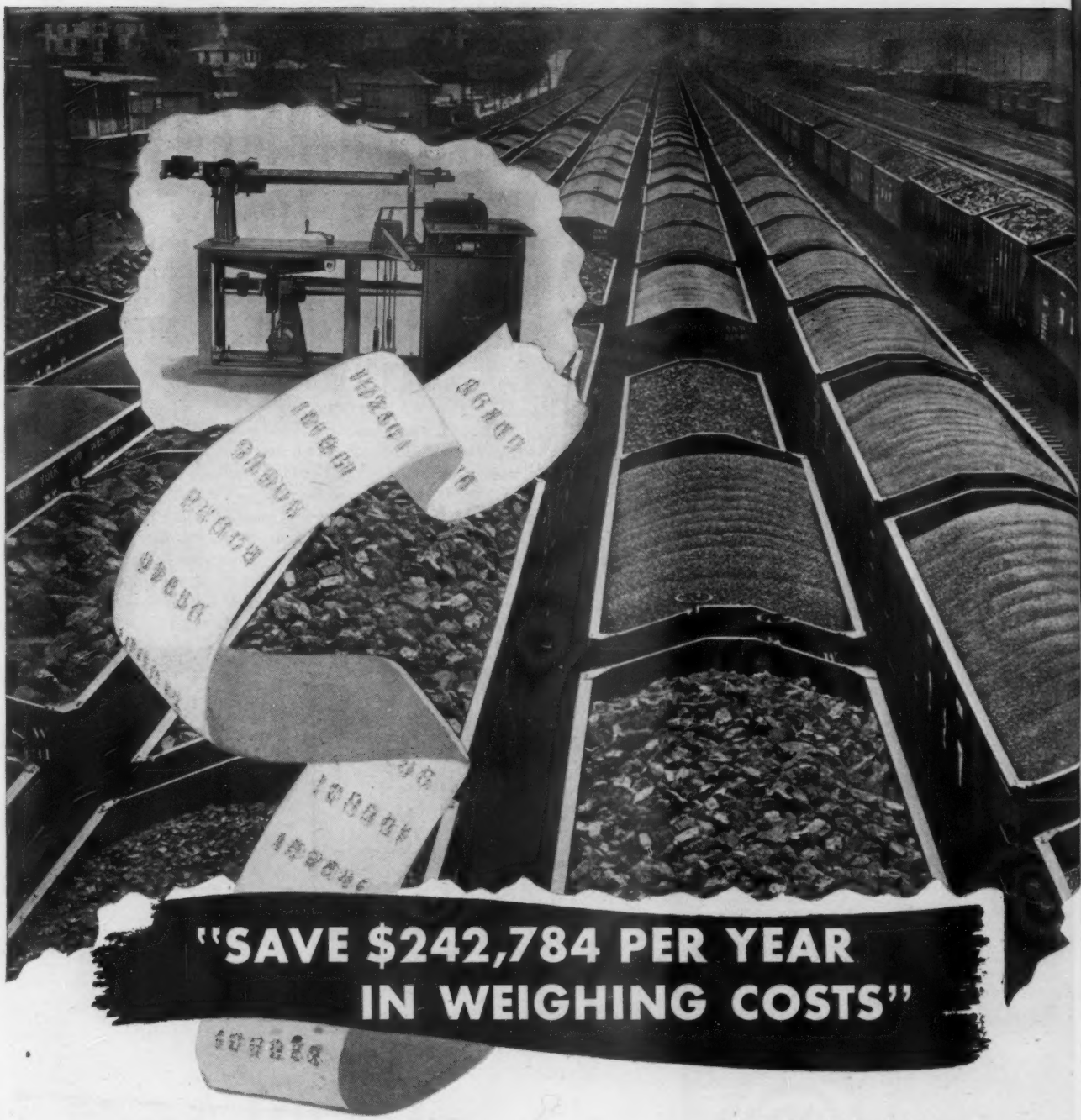


Above: This I.B. Combination Electrically Operated Gantry Crane loads and unloads pig iron or coal between boat and dock by using either magnet or bucket. Horizontal boom may be removed to permit handling of miscellaneous cargo. Right: Big timbers and heavy poles are driven into the ground in a hurry when this big I.B. pile driver gets to work. A full circle heavy duty machine, it is equipped with fifty foot leaders, a large locomotive type boiler, and has travel speeds up to twenty miles an hour.



INDUSTRIAL BROWNHOIST BUILDS BETTER CRANES

INDUSTRIAL BROWNHOIST CORP. • BAY CITY, MICH. • DISTRICT OFFICES: New York, Philadelphia, Cleveland, Chicago • Agencies: Detroit, Birmingham, Houston, Denver, Los Angeles, San Francisco, Seattle, Vancouver, B.C., Winnipeg, Canadian Brownhoist Ltd., Montreal, Quebec.



"SAVE $242,784 PER YEAR IN WEIGHING COSTS"

SUCH A SAVING is a practical possibility . . . through the aid of a Streeter-Amet Automatic Recorder. As many as 2500 cars per day can be weighed on one S-A Recorder. If your cost per hour of engine and crew is $10 per hour, huge savings like the above can be made over hand weighing.

In cases where 100 cars daily are handled at a given point, S-A recording equipment can save you from $8,000 to $15,000 annually. Where only 15 cars a day are weighed the savings can be over $1,000 annually.

With S-A equipment your weighing can be done FAST . . . at the rate of 4 or 5 cars per minute. And the weights are automatically recorded, giving incontestable records.

Besides . . . there is no bottleneck at the scale. Cars roll out at a saving to you and at top speed for your shippers. A Streeter-Amet installation can speed your work now . . . with economy both today and in the future when it will be sorely needed. The services of an experienced field man goes with every Streeter-Amet installation. A free survey of your weighing methods is available for the asking.

STREETER-AMET COMPANY
4109 NORTH RAVENSWOOD AVENUE
CHICAGO 13, ILLINOIS

STREETER-AMET

WHEN YOU THINK OF STATIONS
. . . . . THINK OF PARCEL LOCKERS

ALWAYS,—in all ways the public you serve has the last word. When laying out floor plans for the concourse, waiting room and adjacent sections of a new station or terminal; or when considering the renovation or improvement of existing facilities,— remember that the public trend is definitely to self-service locker checking. . . . The benefits of American Locker Service go far beyond the immediate convenience, safety, speed and service afforded the traveler. Modern lockers, properly placed, divert traffic to separate lanes; eliminate concourse and waiting room congestion; help speed up the whole routine of handling passengers into and out of the station. And another benefit (not to mention increased income to the transportation company) is the public goodwill engendered. This goodwill is directly proportional to the scientific location of the lockers, the required number of lockers, and the volume of passenger traffic through the station. In other words, the last word from the public is: "Yes, we like them! Give us more!"

Write us for on-the-spot surveys plus recommendations for present and post war checking plans all without obligation.

AMERICAN LOCKER COMPANY, Inc.
211 CONGRESS ST., BOSTON 10, MASS.

BOSTON NEW YORK PHILADELPHIA PITTSBURGH
ATLANTA CLEVELAND CHICAGO DALLAS LOS ANGELES

★ ★ ★ ★ ★

PARCEL LOCKERS ARE AN INTEGRAL PART OF TOMORROW'S BLUEPRINTS

Schaefer Appliances

STANDARD ON MOST ROADS

For High Speed Service Use the New

Schaefer EVER-TITE Wear Plate

In the new Schaefer EVER-TITE wear plate, springs are introduced into the wear plate to save needless wear on the side frame brackets. The entire plate assembly is designed to fit firmly into side frame bracket, eliminating play and resultant wear. Especially recommended for high speed freight service.

LIGHT WEIGHT DESIGN INSURES MORE THAN CAR LIFE

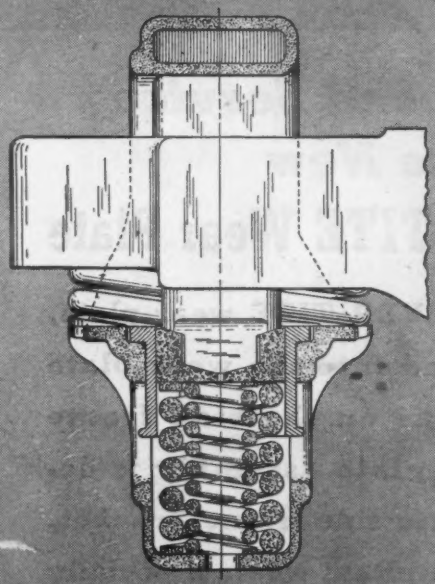
Schaefer EQUIPMENT COMPANY

KOPPERS BUILDING • PITTSBURGH, PA.

DROP-FORGED FOR LIGHT WEIGHT, HIGH STRENGTH, LONG LIFE AND SAFETY

It's here Now!!

The Truck for post-war fast freight service



Section thru Control Unit.
Two Control Units in each frame.

Full protection of cars and lading, rails and roadbed, is essential for economical railroad operation.

A smooth riding car relieves the car and contents from damaging vibrations and shocks, reduces wear on track and car structure, and greatly lengthens the life of equipment.

The National B-1 Truck is equipped with four built-in friction units which control both vertical and horizontal oscillations. No separate snubbers are necessary.

The frictional snubbing action is governed by the load carried, thus assuring a smoother riding car whether light or loaded.

Specify National B-1 Trucks with Dual Control

76 Years Service to Transportation

NATIONAL MALLEABLE AND STEEL CASTINGS CO.

General Offices: CLEVELAND, OHIO

Sales Offices: New York, Philadelphia, Chicago, St. Louis, San Francisco.
Works: Cleveland, Chicago, Indianapolis, Sharon, Pa., Melrose Park, Ill.

Canadian Representatives, **Railway & Power Engineering Corporation, Ltd., Toronto and Montreal**

Easily handled

BY ONE MAN

Alcoa Aluminum cuts dead weight as much as 100 pounds on Fairmont Inspection Cars.

Lightweight inspection cars, which can be handled easily by one man, again are being made of Alcoa Aluminum by Fairmont Railway Motors, Inc., Fairmont, Minn.

Not only are the new models now available but aluminum replacement parts for wartime models can be obtained for cars now in service. Weight reductions of as much as 100 pounds are possible by modernizing with interchangeable aluminum parts.

Fairmont engineers point out that the aluminum construction gives more power per pound of weight, provides greater safety and durability.

ALUMINUM COMPANY OF AMERICA, 2178 Gulf Building, Pittsburgh 19, Pennsylvania.

Heavy wartime models can be modernized with interchangeable aluminum parts.

ALCOA FIRST IN **ALUMINUM**

ALCOA ALUMINUM

T. R. RAIL

and IMPROVED HEADFREE JOINT

★

KEEPS 'EM ROLLING!

★

Griffin Chilled Car Wheels are doing their part in helping the nation's railroads carry larger and heavier traffic loads than ever before. Under such grueling conditions, the endurance of chilled wheels has proved their superiority.

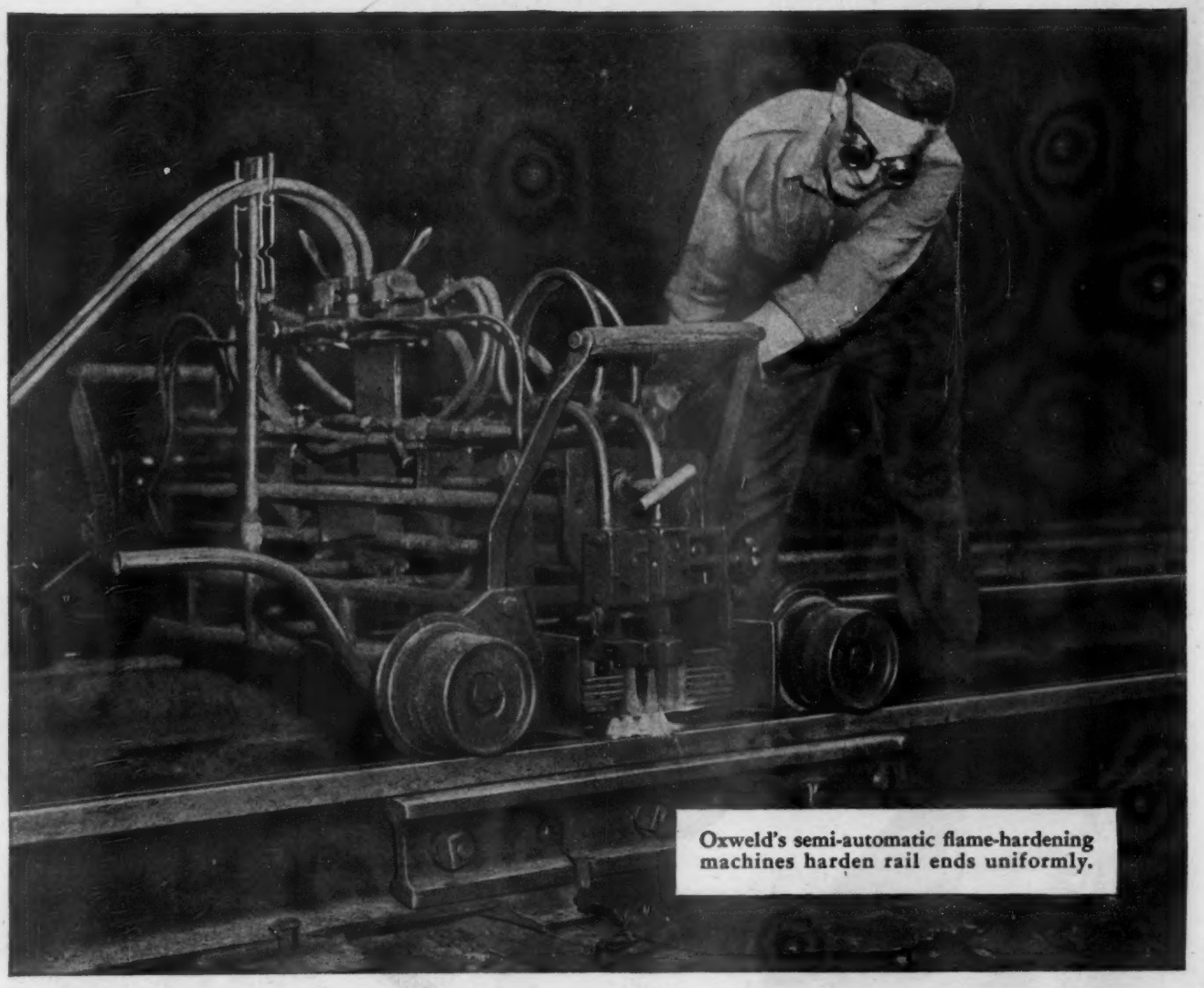
Our twelve strategically located factories are shipping the railroads over 1,000,000 chilled wheels annually. We are ready to fill your railroad's chilled wheel requirements now.

★

GRIFFIN WHEEL COMPANY

410 N. MICHIGAN AVENUE, CHICAGO 11, ILLINOIS

PLANTS: BOSTON, CLEVELAND, CINCINNATI, DETROIT, CHICAGO, KANSAS CITY, COUNCIL BLUFFS, ST. PAUL, DENVER, SALT LAKE CITY, LOS ANGELES, TACOMA



Oxweld's semi-automatic flame-hardening machines harden rail ends uniformly.

LENGTHEN RAIL LIFE...

With Oxy-Acetylene End-Hardening

● Oxweld's end-hardening of new rail by means of the oxy-acetylene flame greatly prolongs rail life because it imparts a uniformly hard, batter-resistant surface to rail ends. A rail-end flame-hardened by Oxweld's method will wear at about the same rate as the rest of the rail, eliminating the possibility of secondary batter. Smooth rail ends cause less wear on rolling stock. Maintenance of rail ends, joint bars, and bolts is reduced.

End-hardening is done in track and may be economically performed as a part of the rail relaying operation, thus taking advantage of the unoccupied track and getting maximum productive time with a small crew.

THE OXWELD RAILROAD SERVICE COMPANY
Unit of Union Carbide and Carbon Corporation

UCC

Carbide and Carbon Building Chicago and New York

SINCE 1912—THE COMPLETE OXY-ACETYLENE SERVICE FOR AMERICAN RAILROADS

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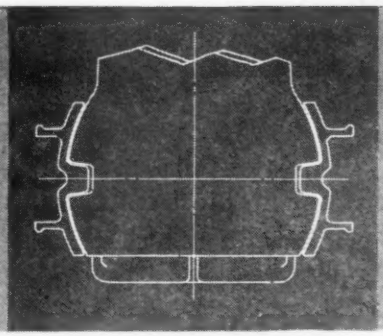
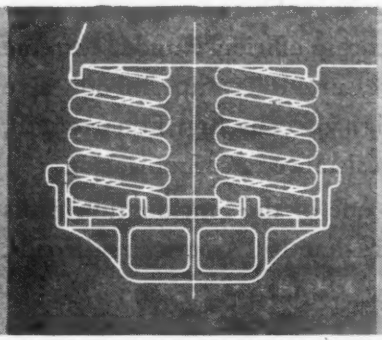
AILROADS

AILWAY AGE

THE A·S·F *Basic* FREIGHT-CAR TRUCK



Here is a rugged truck of simple design. It combines all the essentials of a good freight-car ride with the low-maintenance benefits of simple construction. To illustrate, the A. S. F. Basic Freight-Car Truck is held together by tongues on the side frame columns that mesh with grooves in the bolster. Curved surfaces between side frame columns and bolster minimize column wear, eliminate binding, and assure generous contact areas to provide dependable operation.



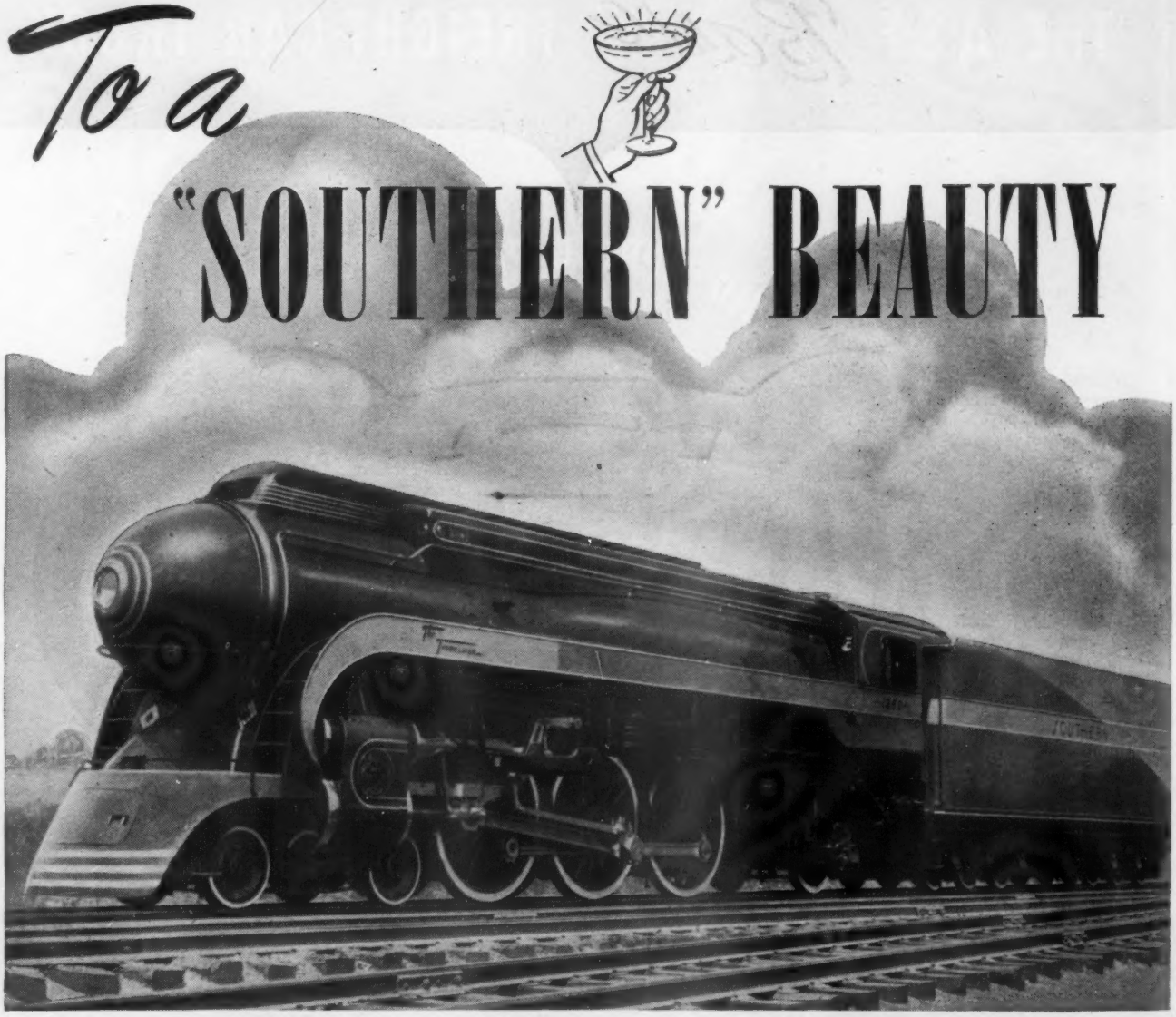
Of simple construction, too, is the flanged spring seat that is an integral part of the side frame. Every side frame and bolster meets all A. A. R. strength requirements. And for greater utility, the Basic Truck can be used with either all-coil spring groups or combination snubber-coil spring groups. The Basic Truck is a safe freight-car truck.

AMERICAN STEEL FOUNDRIES

CHICAGO

MINT-MARK OF FINE CAST STEEL

To a "SOUTHERN" BEAUTY



STREAMLINED grace and championship performance make Southern Railway's "Number 1380" a beauty of the rails.

• • •

The Southern, as one of the nation's greatest railway systems, has a tremendous wartime job. Keeping its extensive rolling equipment up to that job is a notable achievement in operational efficiency and maintenance. Adequate lubrication for equipment has a part.

Southern uses many Sinclair lubricants over its system, including Sinclair Superheat Valve Oil for "Number 1380" and other steam locomotives.

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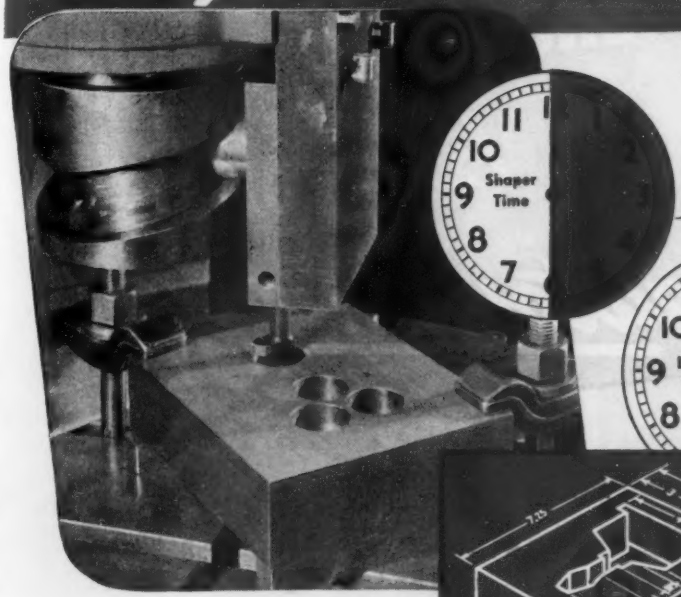
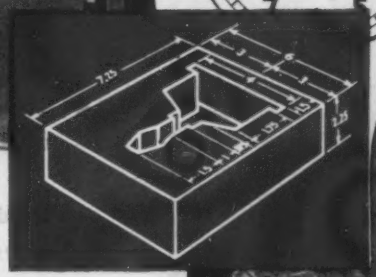
SINCLAIR REFINING COMPANY, *RAILWAY SALES*, NEW YORK • CHICAGO • SAINT LOUIS • HOUSTON

Why use a VERTICAL *Shaper?*



DoALL

DOES THIS JOB IN 1/12 THE TIME



To make a die from thick metal on the Shaper calls for large starting holes. Then, cutting tool moves up and down, removing one chip on each downward stroke.

It takes the DoALL only 1/12 as long to make the same die, and the center is removed in one usable piece.

DoALL Contour Sawing Machines are a "must" in every up-to-date metal working department . . .

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End-weld studs in ½ second—automatically!

★ Complete fusion results between stud and metal.

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★ One operator can weld more than 1000 studs a shift. No previous welding experience is necessary.

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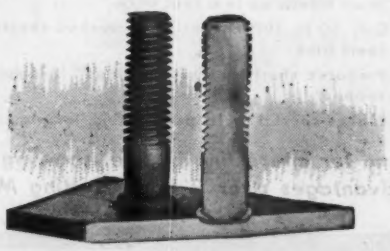
The Nelson Stud Welder is simple to use. All welding is automatically controlled. The tool is completely portable, or may be operated from a fixed jig.



Cutaway view of a stud weld (after etching with Nital) shows the complete fusion of the stud to metal . . . the result of complete shielding of the arc, accurate arc timing, and the use of "flux-filled" studs.

For complete details, prices and catalog, write:

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WELDING EQUIPMENT CORPORATION
Dept. RA, 440 Peralta Ave., San Leandro, Calif.
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Dept. 22, 1416 South Sixth Street, Camden, N. J.

NELSON STUD WELDERS & STUDS

INTERDEPENDENT DEVELOPMENT
-a Continuing Story

THE HISTORY OF RAILROADING

Modern railway signal systems speed shipments and permit the handling of increased volume with maximum safety. The contrast between centralized traffic control machines and the old-time hand lever switch tower is typical of progress that pervades all railway operation.

THE STORY OF COAL

• Modern mine dispatching systems, centrally controlled, speed production with the highest safety factor. Electrically operated signal lights expedite movements of electric mine locomotives in dramatic contrast with the trapper boy signaling with his lamp to the driver of the mule-drawn mine car of bygone years.

. . . EVER MOVING FORWARD TO SERVE THE NATION'S NEEDS

NOT the least of the reasons why America is big and great lies in its vast coal resources and the tremendous adequacy of its railway systems. Coal production and railway transportation present constantly accelerating parallel development. Sound and progressive management in both cases represent high achievement in the realization of the American ideal of free enterprise.

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Announcing

NEW PRODUCT DEVELOPMENT

For Today's Freight Car Rehabilitation Program

The new Monroe Airplane Type Hydraulic Shock Absorber especially designed for freight car trucks, is now available for your rehabilitation program. It embodies the same exclusive Monroe Hydraulic Shock Absorber principles first to be accepted for use on America's railway passenger cars to make high speeds safe and practicable.

By controlling destructive vibration the new Monroe Airplane Type Hydraulic Shock Absorber minimizes vertical and swaying action and protects lading and equipment. Maintenance costs and damage claims are reduced and cars are kept at work longer.

Easily and quickly installed, the new Monroe Airplane Type Hydraulic Shock Absorber for freight car trucks *fits right in*, with no holes to drill. It replaces one of the springs in the cluster . . . quickly pays for itself and pays profit through savings effected.

Our engineers will gladly work with you in the application of this modern new Monroe Airplane Type Hydraulic Shock Absorber for the rehabilitation of your freight cars.

ARMY E NAVY

RAILWAY SUPPLY DIVISION

MONROE

MONROE AUTO EQUIPMENT CO. . . MONROE, MICH.

* In use since 1938 on high speed crack streamliners, Monroe Airplane Type Hydraulic Shock Absorbers have smoothed the ride and saved thousands of man hours' maintenance time. They demonstrate the soundness of exclusive Monroe Hydraulic Shock Absorber principles.

THEY PROTECT EQUIPMENT, LADING AND ROADBED

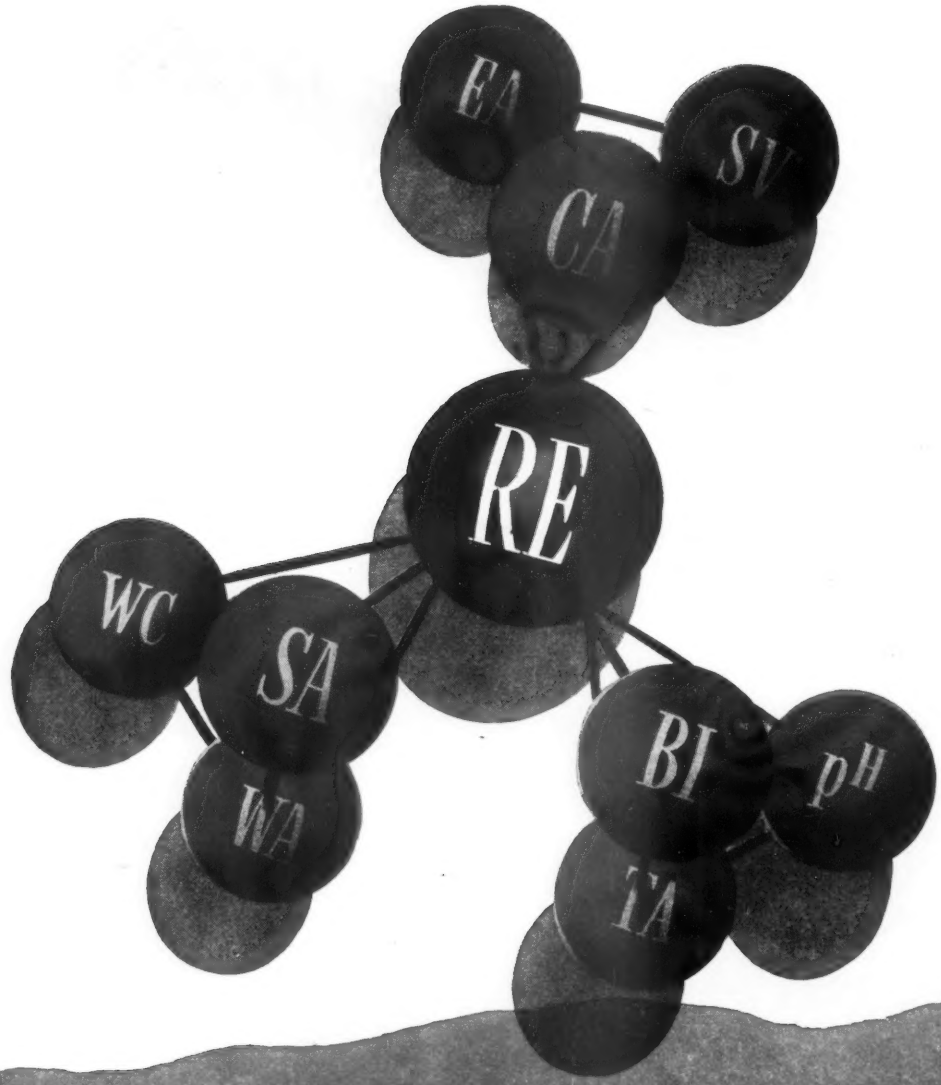
Barber Stabilized Trucks damp both the up and down movement of the spring supported bolster, the friction pressure being in proportion to the car load—IT IS NOT A FIXED PRESSURE.

A spring grouping with 2½" travel can be substituted for A.A.R. springs with only slight changes in the bolster and side frame.

The effectiveness of Barber Stabilized Trucks is evidenced in the fact that they have now been selected for over 92,000 freight cars by 55 different railroads and private car lines.

STANDARD CAR TRUCK COMPANY

332 SOUTH MICHIGAN AVENUE — **Chicago 4, Illinois**



THIS IS WHAT HAPPENS WHEN YOU WASH A LOCOMOTIVE

Correctly cleaning a locomotive is no simple operation... these elements must go into action...

Wetting Action *(WA)* must lower surface and interfacial tensions and allow the cleaning solution to penetrate to surface of the base. Emulsifying Action *(EA)* must disperse grease and oil as tiny globules, and by suspension prevent redeposition. Saponifying Value *(SV)* must convert organic fats and oils into soluble soaps, and Solvent Action *(SA)* put soils into solution. Colloidal Activity *(CA)* must disperse solid soils into minute particles which may then be easily removed. Water Conditioning *(WC)* removes or controls the elements which cause water hardness.

Correct Buffer Index *(BI)* assures ability to absorb either alkaline or acid soil, thus prolonging efficiency of the solution. Proper *pH* assures the correct measure of energy of alkalinity and Total Alkalinity *(TA)* must supply maximum active cleaning energy.

In formulating a cleaning compound, therefore, it is obvious that no one factor is a magic key to all problems. The answer is in determining the relative value of *all* these factors as they apply to *your* problem.

Putting these factors into correct balance is a responsibility you can entrust to Turco chemists —a responsibility for which their two decades of Research and Experience *(RE)* have well qualified them. *Take your problem to Turco*

For a fuller explanation of these vital factors, write for Turco's Booklet on your firm letterhead, please.

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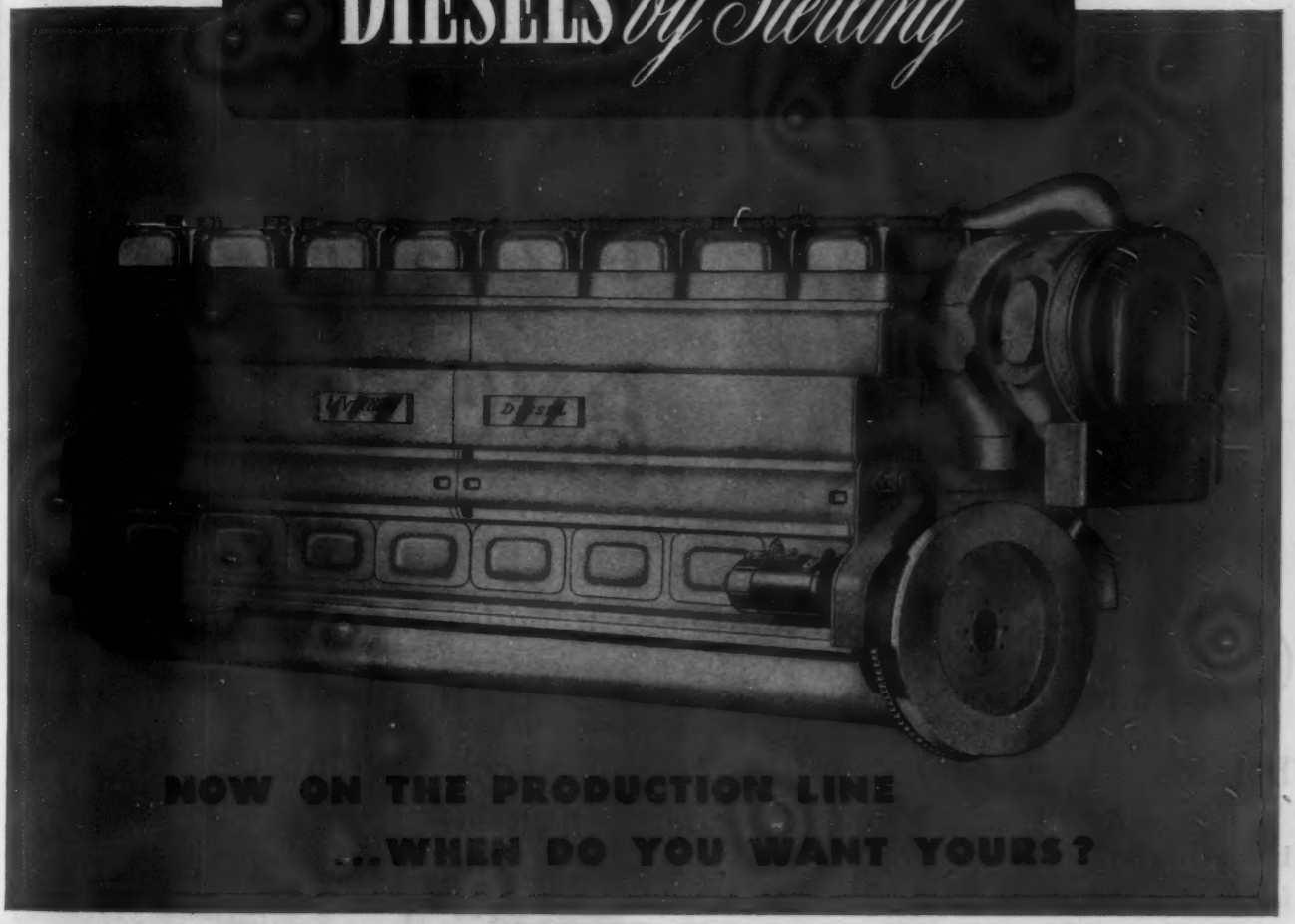
RAILWAY AGE

DIESELS *by Sterling*



NOW ON THE PRODUCTION LINE
...WHEN DO YOU WANT YOURS?

★ So great has been the interest of the railway industry in the new Sterling Viking Diesel that we have already set up production line methods of manufacturing this advanced streamlined engine. This means we can accept orders now for early delivery of this modern improved power plant for locomotives, rail cars, turn tables, signal towers, cranes, bulldozers, and many other power applications. Sterling engineers will gladly cooperate in planning installations of the Sterling Viking Diesel best suited to your particular requirements —six or eight cylinder; supercharged or unsupercharged. Write for illustrated engineering bulletins.

Other Sterling engines—gasoline, gas, butane and Diesel, from 85 to 1800 horsepower—also available.

"KEEP BUYING WAR BONDS"

STERLING

VIKING DIESEL

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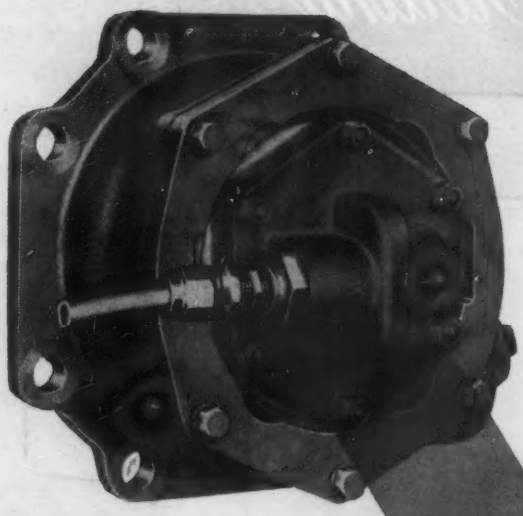
The "AP" DECELOSTAT



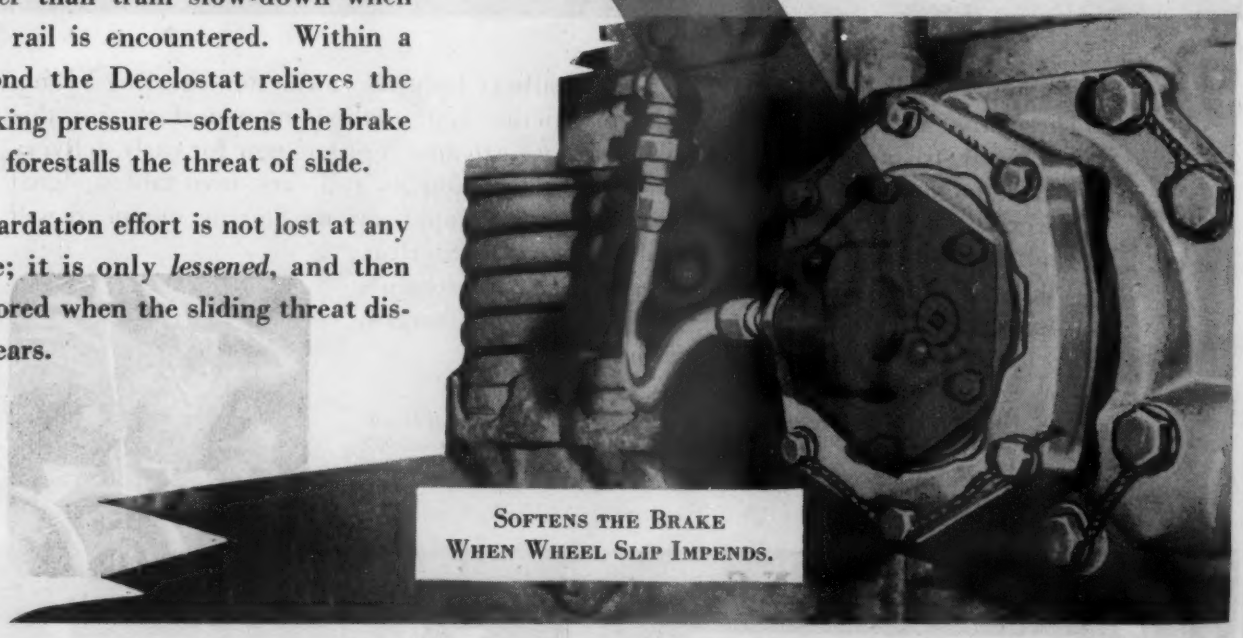
thinks and acts in less than . . .

ONE SECOND

THE "AP" Decelostat keeps unending vigil on the wheels. When brakes are applied it registers the slightest retardation, holding a trigger finger on the rate of wheel slow-down.

It acts if wheel slow-down becomes faster than train slow-down when bad rail is encountered. Within a second the Decelostat relieves the braking pressure—softens the brake and forestalls the threat of slide.

Retardation effort is not lost at any time; it is only *lessened*, and then restored when the sliding threat disappears.



SOFTENS THE BRAKE
WHEN WHEEL SLIP IMPENDS.

Westinghouse Air Brake Company

Wilmerding, Pa.

Railway Age

With which are incorporated the Railway Review, the Railroad Gazette and the Railway Age-Gazette. Name registered in U. S. Patent Office.

Vol. 118 February 17, 1945 No. 7

PUBLISHED EACH SATURDAY BY THE SIMMONS-BOARDMAN PUBLISHING CORPORATION, 1309 NOBLE STREET, PHILADELPHIA 23, PA., WITH EDITORIAL AND EXECUTIVE OFFICES AT 30 CHURCH STREET, NEW YORK 7, N. Y. AND 105 W. ADAMS STREET, CHICAGO 3, ILL.

WASHINGTON 4, D. C.: 1081 NATIONAL PRESS BUILDING. CLEVELAND 13: TERMINAL TOWER SEATTLE 1: 1033 HENRY BUILDING. SAN FRANCISCO 4: 300 MONTGOMERY STREET, ROOMS 805-806. LOS ANGELES 14: 530 WEST 6th STREET.

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In This Issue

The Railway Age is indexed by the Industrial Arts Index and also by the Engineering Index Service

★

PRINTED IN U. S. A.

A PEACETIME ECONOMY BECAME A WARTIME NECESSITY

In time of peace, car retarders were installed for many reasons, but a major consideration was the fact that they cut the cost of handling cars in classification yards. In 16 installations reported by the Signal Section of the A.A.R., the saving averaged 28c per car.

Those economies continue, but today, roads are even more interested in the huge saving in *time*.

Thanks to Electro-pneumatic car retarder systems, cars are going through the yards more quickly, often averting construction of additional tracks. More cars are being handled than seemed possible, and this in the face of an ever-growing shortage of labor. Precious war freight reaches its destination hours or even days earlier.

Our engineers will be glad to show you how and where "Union" Electro-pneumatic Car Retarders will speed up wartime traffic and help to meet post-war competition.

UNION SWITCH & SIGNAL CO

SWISSVALE, PA.

NEW YORK · CHICAGO · ST. LOUIS · SAN FRANCISCO

The Week at a Glance

STEAM TURBINE ENGINE: This issue carries a detailed illustrated description of the Pennsylvania's new experimental geared steam turbine locomotive, built in collaboration with Baldwin and Westinghouse. Employing a 6-8-6 wheel arrangement, this engine develops 6,900 hp. Compared to the conventional reciprocating locomotive, its advantages, as the engineers explain them, include production of more power from the boiler and maintenance of uniform torque while doing away with reciprocating parts, dynamic augment, and unbalanced forces. It was necessary to develop a new grinding method to finish, with the extreme accuracy required, the double helical gearing employed in the transmission of power to the driving axles.

●

PUBLIC SELF-INTEREST: The New York Central's President Metzman has an answer (amplified in a feature article herein) to the question: Will our post-war public policies *en*courage or *dis*courage the flow of private capital into the railroad business? If public opinion becomes convinced that it is in the public interest to have *all* forms of transportation equally self-reliant, equally independent of tax-supported subsidy, then the pressure of that conviction will tip the scales for private management under conditions that hold some prospect of profit for new capital. The immediate job of the railroads, and of railroad men as individuals, then, is so to *inform* public opinion that it will be able properly to assay the promises of socialistic politicians and publicists and properly to recognize the importance of a successful privately-supported railroad industry to the self-interest of the taxpayers, producers, laborers, shippers, travelers, investors, and savers who constitute that public.

●

REMAKING THE ROADBED: Grading and resloping operations on a railroad right-of-way are not projects of the "leaf-raking" variety, even though one of the results is an improvement in the appearance of the property, an editorial emphasizes. The real objectives of such work, it explains, are reducing the need for much routine maintenance, improving the stability of the track structure, promoting proper drainage conditions, facilitating the use of power mowers and similar labor-saving machinery, minimizing snow accumulations, and increasing safety by bettering visibility.

●

FINANCE FUNDAMENTALS: Prices of railroad stocks—which are still lagging in the doldrums of investors' disfavor—and not the prices of their bonds, constitute the ultimate index to the railroads' prospects for obtaining private funds with which to improve their properties—so this week's leading editorial points out. The mere fact that bond prices are on a relatively high plane is less a reflection of the ability of the industry to attract capital than it is a consequence of the roads' consistent efforts, through the use of the better earnings produced by the war, to cut down their indebtedness to less burdensome proportions. Sound financing of betterments—which precludes inflating the ratio of debt to equities—still must await recovery of stock prices from depression levels—a condition not yet attained, or even discernible on the visible horizon. Confidence in railroad credit awaits recovery of stock prices from their low estate, a happy event delayed overlong, it is pointed out, by such obstacles as the I. C. C.'s "wringer," the paucity of dividends, and the extremes to which government-subsidized competition may grow.

●

FIRST STEEL BRIDGE: The Alton's chief executive officer has recounted the history of the steel bridge built by that road's predecessor in 1879 at its Glasgow, Mo., crossing of the Missouri river, and in so doing has added another chapter to the long story of research behind the present technological development of the railroad as an efficient instrument of transportation. The story of the bridge, and of the obscure steelmaker whose genius went into the creation of the material of which it was fabricated, appears on page 343.

●

ANOTHER TRAFFIC RECORD: Only one lake vessel has been delayed awaiting railway cars since the beginning of the 1939 shipping season. An editorial hailing this achievement of the railroads under the load of the war's record-breaking traffic appears this week. Two outstanding factors contributing to this efficient performance were the steady advances that have been made in the control of car delays and the substantial expenditures made by the railroads to enlarge and modernize their loading and unloading facilities.

●

HOW MANY B.O.'S?: The extent to which war-induced lowered standards in the system of rating bad-order cars are reflected in current shortages of cars suited to particular classes of lading is the subject of editorial discussion this week. Even though something has been learned, under pressure of necessity, about how far cars can be run between shoppings, the question is raised whether this knowledge is not being acquired at the risk of irremediable consequences of cumulative delays in car rejuvenation.

●

NEWS BRIEFS: Pullman Standard's program of plant modernization and expansion is announced. . . . Lend-lease, through last November, had sent 1,045 locomotives and 8,000-plus freight cars to Russia. . . . Blizzards of unusual intensity hit New England last week; the railroads drafted men and boys to augment their regular forces, but the brotherhoods wouldn't let them employ prisoners-of-war in the emergency. . . . Tank car deliveries of oil to the East fell off to a three-year low as a result of traffic tie-ups in trunk-line territory, where the winter's storms hit hardest. . . . The commission has decided to let the T. P. & W. borrow some money to pay its bills pending a solution of its controversy with the O. D. T. . . . The House has passed the Hobbs bill.

CRUSADING FOR CHAOS: Speaking in Chicago recently, Judge Fletcher invited his audience to draw its own conclusions as to whether the current crusade of the Department of Justice against the regulated railroad industry in general, and its rate-making machinery in particular, is, under present circumstances, either patriotic or intelligent. In his discourse, which is set forth in this issue on page 345, the speaker developed the background of the anti-trust contingent's campaign, and pointed out how the Army, the Navy, the War Production Board, and the Interstate Commerce Commission all have shared with Congress—and with the railroad industry—the responsibility of shaping procedures by which the carriers could function as an organized entity in creating the transportation service required to meet the needs of war. The alternative to such organized effort is conflict and confusion—a vastly magnified recrudescence of the deplorable conditions that hampered the utilization of the railroads' capacity in World War I. Whether or not the activities of the department were deliberately designed to bring about just that situation, their effect, if allowed by the courts to come to fruition, would appear to portend equally devastating consequences, the best word for which is chaos.

●

BATTLING BENEFICIARIES: The neutrality of the Railroad Retirement Board's "neutral" chairman, challenged last week by the railroads' counsel at the hearing before the House interstate commerce committee, was again and very pointedly questioned this week, in the same forum, by the spokesman of the engineers' brotherhood. Not only were the railroads not kept informed about the "technical" work the chairman and his staff were engaged in—even though they pay the major part of the expenses thereof—but some of the potential beneficiaries of this endeavor, apparently, were kept equally in the dark about what sort of proposals were being drafted in camera to "liberalize" the railway employee social security statutes. The engineers, as reported in this issue's news pages, profess a liking for the collective bargaining process as a method of arriving at workable legislative amendments to bolster up the shaky solvency of the retirement system as now operated.

●

FIVE-YEAR PLAN: The Interstate Commerce Commission's Bureau of Statistics figures that the railroads have been able, since 1941, by taking advantage of regulations permitting amortization on a 5-year basis of the cost of wartime equipment purchases, to charge against operating expenses some $326 million more than they could have charged off on the pre-war basis. There were additional charge-offs under the 5-year plan for road property facilities. After 1947, unless there are substantial additional expenditures in this or later years to which the 5-year plan will apply, the charge-offs will drop to relatively small sums. The details appear in the news pages.

OKOLOY

was not drafted . . .

It volunteered in 1928

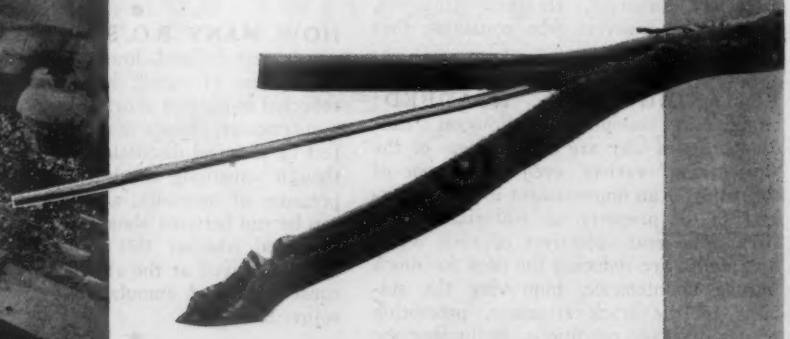
The war-caused shortage of tin forced many wire and cable manufacturers to search hurriedly for substitutes to replace the tin coating on conductors to prevent chemical reactions between the copper and rubber insulation.

In 1928, however, Okonite chemists, constantly discontent with run-of-the-mill practices, had developed and perfected Okoloy, a lead alloy coating that outlasts tin at least 2 to 1.

The old practice of "tinning" the copper conductors by passage through a bath of molten metal gave inadequate protection and too often led to failure and premature deterioration of expensive cables.

No war-forced substitute, Okoloy, for sixteen years, has been used to protect the copper conductors of all Okonite rubber insulated cables. When you specify any Okonite cable, Okoloy is just one of the "plus benefits" you obtain.

LASTING PROTECTION: After electrolytic cleaning, all Okonite copper wire passes through the Okoloy bath where, under carefully controlled temperature, the corrosion-resistant Okoloy coating is bonded to the conductor.



PROVED IN THE FIELD SINCE 1928: Section of Okoloy-coated wire removed for examination in 1941 after 13 years of service along right-of-way of a major railroad system, where it was continuously exposed to weather and to highly corrosive sulphur fumes. Note perfect condition of Okoloy coating and Okonite insulation.

THE OKONITE COMPANY, PASSAIC, NEW JERSEY

OKONITE INSULATED WIRES & CABLES

3706

Has Railroad Credit Been Restored?

Two highly-regarded observers of business and financial conditions—the monthly Economic Bulletin of the National City Bank (N. Y.) and General Leonard P. Ayres, economist for the Cleveland Trust Company and the Chesapeake & Ohio Lines—have recently drawn attention to the remarkable improvement in railroad credit (see *Railway Age* of January 27, page 244, and February 10, page 312). General Ayres bases his analysis mainly on the ratio of the average price of second-grade railroad bonds to those of high-grade. When railroad credit is poor this ratio is low and, as credit improves, the ratio increases. General Ayres computes this ratio as 83 per cent in December, 1944, as compared to only 31 per cent at the depth of the depression and 53 per cent as recently as 1938.

Significance to Stockholders

The City Bank's Economic Bulletin analyzes the interest-yield of railroad bonds at varying market prices—judging the railroads' credit rating to be in inverse ratio to the magnitude of the interest their bonds will yield. Thus, in 1932, high-grade bonds of the so-called "Aaa" rating could be purchased at a price to yield 6.75 per cent on the investment. The yield has recently been declining until it is only 2.86, while bonds rated somewhat less favorably as "Baa", which could have been purchased in 1932 to yield 14 per cent, now fetch prices which will bring the investor only 3.8 per cent.

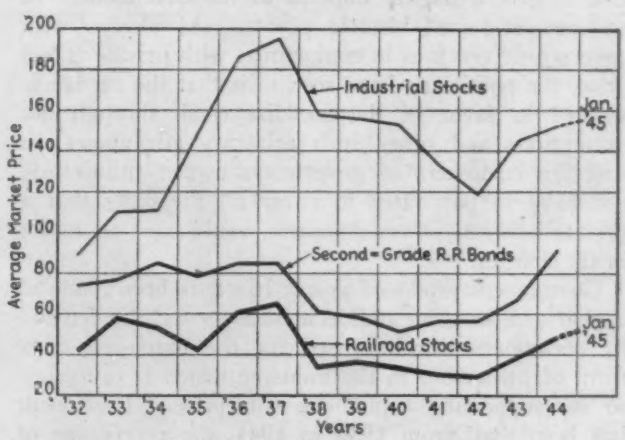
These observations are doubtless most encouraging to institutions and individuals who already have large sums committed in fixed-interest obligations of the railroads. It would, however, be easy to exaggerate their significance to the actual owners of the railroads, i.e., the stockholders, and to the public interest in continued substantial private investment in the railroads, needed to assure adequate and efficient transportation service—and to more than 2,000,000 people who depend upon the railroads and the purchases made by the railways as a source of remunerative employment.

As a practical matter, the railroads cannot depend upon bond financing as a source of funds for the improvements which they will need to make to improve the economy and quality of their service in a degree commensurate with "the state of the art." Bitter experience has taught them the unwisdom of again increasing the ratio of bonds to stocks in their total capitalization; and, besides, in the opinion of the railroad committee of the Investment Bankers Association, the improvement in railroad credit would quickly be reversed if the railroads should cease to use their earnings to reduce their indebtedness and, instead, should attempt again to increase their burden of debt in connection with the financing of improvements (see *Railway Age*, January 6, page 83).

Both General Ayres and the City Bank's Bulletin mention the continued depression in the prices of railway stocks—and stock prices, rather than those of existing or refunding bond issues, are the real test of the railroads' ability to lay their hands on funds for a substantial and continuing program of improvement. Without the opportunity for equity financing, improvements cannot be made in large and continuing volume; and without such improvements neither railroad service nor the employment opportunities on the railroads can attain a standard commensurate with the "inherent advantages" of railroad transportation. And if the railroads fail to attain a degree of utilization in keeping with their "inherent" economy, the national well-being will suffer, along with that of those persons whose lives and savings are identified with the railroad industry.

Railroad stock prices persist at depression levels (1) because dividends upon them have not been resumed in reasonable ratio to current earnings, (2) because of the policy of the I. C. C. to obliterate in reorganizations all "old company" equities, and (3) because these stocks will have to bear the brunt of the competition of coming socialized competition of unpredictable magnitude (a theme cogently advanced in recent addresses by Presidents Metzman of the New York Central, and Gurley of the Santa Fe, reported in our issues of December 23, 1944, and January 13).

Railroad Stocks Still Priced 100 Points Lower Than Industrials and Less Than in '33, When Gross Was 33 Per Cent, Net 43 Per Cent Less Than at Present



Yearly Highs of Dow-Jones Averages

The improvement which has occurred in bond prices is a necessary preliminary to the restoration of stock

prices to a point where the railways may once again look forward to becoming a flourishing private enterprise—to the benefit alike of customers, employees and owners. But that happy situation hasn't yet been attained; it isn't even in sight.

Injustices to the Electric Power Industry

Private enterprise and its attendant political freedom will not endure in this country if people associated with each branch of industry defend only their immediate interests against socialistic attack; and do nothing or even join with the socialists when some sector of enterprise other than their own is being devoured. For this reason, not only ethical principles but far-sighted self-interest demand of railroad people that they give understanding attention to the political persecution being visited upon the privately-owned electric utilities.

A small part of this industry was preyed upon by financial gangsters some years ago, a fact which has been distorted by politicians in a largely-successful effort to give the whole industry a reputation for piracy. Actually, the financial scandals touched only a segment of the industry and, anyhow, since rates are based on physical valuations and not on capitalization, the buccaneers' activities took no money out of the pockets of the industry's customers, but only from those of its owners—a class of people for whose welfare the anti-utilities demagogues are wholly unconcerned.

By the device of imputing to the whole utilities industry the sins assignable only to a part of it; by holding the present generation of utilities owners and managers culpable for the misdeeds of their predecessors; and by inducing people who have not been victimized by these malefactions to believe that they have been, the scheming socialistic politicians have been able to give a mighty impetus to the development of government-owned electric power. As always with government ventures in competition with private enterprise, the politicians have seen to it that the cards are stacked in favor of the socialist rival, through tax exemptions and other such arbitrary advantages, so that the customers of government-owned utilities do not have to pay rates to cover all the costs that a privately-owned power company would have to collect in its charges.

Government-produced power has thus been made to appear as a bargain, and, as a consequence, the demand by consumers has increased for the extension of a form of ownership in the industry which is cancerous to self-supporting capitalistic enterprise. The result has been that, from 1930 to 1941, the percentage of government-produced power to total output rose from 5 per cent to 15 per cent, with promises of more to come. This development is not opposed by a large part of the manufacturing industry and other users of power, but is favored, because, while it is coercive and socialistic, the owners of utility property appear to the thoughtless to be the only losers; and most large buyers of power do not oppose such mayhem of private industry when they derive a tangible benefit from it.

We make these observations regarding the utilities lest railroad people thoughtlessly take satisfaction in the traffic the carriers may get from government-financed dams and other socialistic power installations; or be induced to believe that such coercive "investment" represents "progress." Because these government ventures enjoy political favors not available to privately-owned rivals and because they employ deceptive bookkeeping, they inevitably grow at a rate not justified by their comparative economic merit—and at the expense of other outlays which would give the public a larger return in proportion to cost. A nation does not promote its economic welfare by indulging in uneconomic behavior, and a railroad man who is patriotic and intelligent will oppose socialized power just as earnestly as he opposes socialized transportation, and for the same reasons.

If railroad people will take an enlightened and perspicuous view of the plight of the power industry, it is not unlikely that those interested in the electrical industry might show to a greater degree than heretofore a reciprocal opposition to the same character of socialist assault on the railroads, in the form of toll-free waterways and aids from general taxation to other forms of transportation. Competition by the public treasury is not the enemy alone of the particular industry which is being attacked at the moment, but of all private enterprise—as even the manufacturers, including automotive manufacturers, will eventually find out by experience if they persist in refusing to learn it by precept and forethought.

Aiding Russian Railways

Although railway procurement officers in this country have been beset by many complications in furnishing the materials and equipment necessary to maintaining efficient railway operation in war-time, their problems have been relatively free from the destructive influence of war. They have often been forced to apply the old adage: "Patch it up, make it do and wear it out," but they have not had to contend with the wanton plant destruction that has impeded railway operation in the countries that have been ravaged by war.

Consider the really complicated problems that have confronted railway operating and procurement officers of the Soviet armies in their triumphant drive from Stalingrad to Berlin. After the Nazis were defeated and turned back at Stalingrad in November, 1942, and during the months of their 1,400-mile retreat to Germany, they carried out a systematic program of destruction to slow the pace of the victorious Soviet armies. The Nazis demolished bridges, classification yards, terminal layouts and great quantities of railway equipment.

Because production for the replacement of equipment, materials, and supplies by the factories and mills of the Soviet Union was insufficient, a considerable proportion was supplied by the United States under lend-lease. In addition to the millions of tons of American-made ammunition and equipment that have played such an important part in the Soviet march into Silesia, East

Prussia, Poland and other areas on the Eastern front, a recent statement by our Foreign Economic Administration reveals the quantities of railway materials and equipment that were used in bolstering vital Soviet transportation.

Although the statement emphasizes that our lend-lease supplies have been small compared to the total needs of the Soviet Union, nevertheless, the United States has supplemented to an important degree Soviet production and resources. Our shipments included locomotives, freight cars, rail and many other vital supplies so essential to extended Soviet supply lines. In January, 1944, the F. E. A. launched a program to supply railroad equipment for the drive against the fleeing Nazis. Through November, 1944, there have been supplied under the lend-lease program 1,045 locomotives, 7,164 flat cars, 1,000 dump cars and 100 tank cars. Movement of this equipment reached its peak last November when 1,367 flat cars were shipped.

Furnishing replacement rail has been a major task of lend-lease. Of the 2,120,000 tons of steel that had been shipped to the Soviet Union by the end of last November, 478,000 tons consisted of steel rails and 110,000 tons comprised wheels and axles.

Of outstanding benefit to the Soviet Union in rebuilding and re-equipping her war industries throughout areas devastated by Nazi armies, have been 60 American power trains. These comprise nine 5,000-kilowatt trains, 26 trains of the 3,000-kilowatt type and 25 trains of 1,000 kilowatts, all of which had been shipped by the end of November. Comprising complete steam generating units mounted on flat cars, these power trains can be moved from city to city or industry to industry as they are needed. The first group of the power trains was assigned to the Donets Basin, where the trains won the immediate praise of Soviet engineers. Soviet officials on many occasions have expressed their appreciation for U. S. lend-lease aid that has played such an important part in rejuvenating Soviet railway transportation in war-torn areas.

Roadbed Stabilization

A number of railroads are now engaged in a phase of roadbed stabilization—grading and resloping the right of way, all the way back to the right-of-way fence if necessary, to restore or strengthen track embankments, to flatten or bench constantly eroding cut slopes, to eliminate water-holding borrow pits and pockets, to provide adequate ditches, and, to the extent possible, to insure general drainage away from the track, rather than toward it. This is a class of work that might well have been undertaken long ago, and no doubt would have been if suitable equipment had been available to make it practicable.

Witnessing such heavy earth-moving operations, some railway officers, less informed in roadway matters than they might be, have been known to raise their eyebrows —have even spoken of such work as "parkwaying" the railroad. Others, uninformed, both on and off the railroads, may well have raised questions also. The considerations which justify this work ought to be more generally known.

It is true that the grading has had the inevitable effect of improving the appearance of the right-of-way, but this is the least sought of the many advantages to be gained, not that it is an unworthy objective in all circumstances. The primary aims are—to restore weathered and weakened embankments to enable them to withstand the pounding of present-day traffic; to eliminate the constant ditch cleaning and the sloughing off or scaling of cut slopes; and to reshape the contour of the right-of-way so that water, the Number One enemy of the track structure, will drain away from the roadbed and not, as is so often the case, toward it. These advantages, in themselves, will usually more than justify the cost of the work involved, but there are other important benefits.

One of these is the reduced man-hours and cost of general track maintenance resulting from a dryer, more stable roadbed. Another is the fact that graded rights of way permit the use of power mowers in controlling objectionable weed growth, with large savings in costs and man-hours of labor compared with those of doing the same work by hand methods. Still another is the elimination of abrupt pockets for the accumulation of drifting snow, an important consideration in northern

The Need: A Courteous Countenance Which Isn't a Come-on

"Wipe Off That Smile, Hoskins!"

climates, and which on some roads has already permitted the removal of many miles of snow fences, while at the same time reducing the need for snow plow operation. Still another advantage in this right-of-way work is to be found in the improved vision that can be afforded at many otherwise hazardous grade crossings.

Some roads are also taking advantage of the opportunity to widen embankments sufficiently on one side to permit the operation of company-owned trucks to carry men and materials close to the track at any point, while at the same time affording a shoulder for the free movement of off-track roadway machines, entirely independent of traffic.

Engineering and maintenance officers are aware of all of these advantages in the interest of more easily and economically maintained track structure. But if they do not make their managements and other interested parties equally conscious of these advantages, they should not be surprised if they cannot get enough support for their proposed programs of work; and they will have nobody to blame but themselves for the continued handicaps under which they will have to operate.

Lake-Rail Handling

During the first World War it was routine for lake vessels to be held two to three days at the lower lake ports awaiting railway cars into which to transfer their cargoes of ore. In this war, and going all the way back to the beginning of the 1939 shipping season, only one vessel has been delayed awaiting railway cars. This performance is rendered more remarkable by the fact that during the first World War the peak movement of ore in any one year was 65 million tons, whereas, in the current war, nearly 95 million tons were handled in the peak year 1943.

The handling of lake-rail coal shows a similar history. In the first World War the maximum handled in any one shipping season was just over 28 million tons. Over 51 million tons of this commodity were handled in 1941. Despite the limitations imposed on lake coal shipments by O. D. T. orders 9 and 9-A, 49 million tons were handled in the 1942 shipping season and 47 million tons in 1943. In the 1944 season, with the demand for ore somewhat reduced and the restrictions removed, nearly 56 million tons of coal were handled.

The reasons for this improvement are obvious when the operating facts are considered. First, the modern loading and unloading facilities constructed at the ports by the railways permitted record-breaking tonnages to be handled. Second, the control of car movement was much improved. In 1942 the average detention of cars at lake ports was 4.28 days. This was reduced to 3.58 in 1943 and to 3.31 in 1944. Since more than 900,000 cars of coal are handled at Lake Erie ports each season, what this meant was that in 1944 about 3,500 car-days were saved every day of the shipping season at the lower lake ports alone.

The principal commodities handled on the lakes are ore, coal, grain and limestone. The 1944 grain tonnage was in excess of 500 million bushels, while the limestone traffic amounted to about 17 million tons. In 1943, because of the late start of the season and other factors, there was always plenty of freight for any vessel arriving at the head of the lakes. Last year, because of the early start of the shipping season and the reduced demand for ore, this condition did not prevail. However, because of the cooperation of shippers and the efficient and dependable rail transportation, it was possible so to schedule boats that their average detention was less than in any year during the present war.

Lake-rail freight, as indicated by the tonnage figures quoted, is a highly important factor in the nation's wartime transportation. By smooth and efficient operation, the railways serving the lake ports have been able, despite increased traffic, to supply as much transportation as was necessary at all times so that the only limiting factor has been the capacity of the boats.

The Wonderful Freight Car

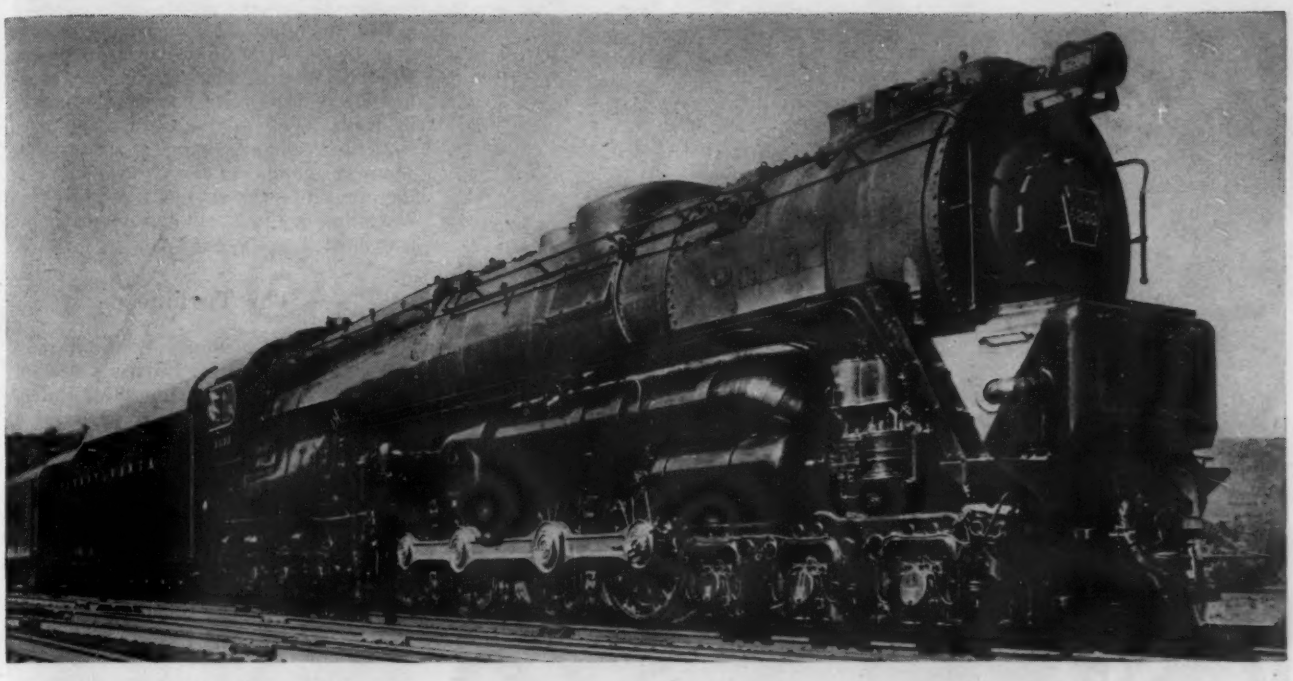
Close observation of passing freight trains or a trip through a classification yard these days brings to mind the well-known poem of Oliver Wendell Holmes, "The Deacon's Masterpiece," better known as "The Wonderful One-Hoss Shay." Certainly there is "A general flavor of mild decay" about many of the cars which are to be seen in service today.

According to official reports only about three per cent of the freight-car inventory is currently awaiting repairs and these are not the cars which one sees. Certainly many more than three per cent of the present freight-car ownership belong in the awaiting-repair classification. How much longer it will be felt necessary to maintain the bad-order ratio at its current low figure is not now evident. War-traffic demands do come first and may entirely justify the maintenance in service now of cars that in normal times would be shopped for heavy repairs. However, the failure to replace wear-and-tear depreciation with new construction or proper rebuilding is having an ever-more-marked effect on the supply of cars which are available for many types of lading. This effect has been especially noticeable in the almost continuous shortage of box cars for loads which require that a car be in first-class condition.

The low bad-order figure misleads by indicating that the balance of the car inventory is serviceable in the various degrees required by traffic demands. On a number of occasions, car-department officers, after having answered a question concerning their bad-order standing by quoting the reported figure, have replied to an inquiry about how many of their cars should be shopped out for repairs by naming a figure 50 to 100 per cent higher. The bad-order figure is accurate but the system of rating cars has changed. Safety has not yet been involved but the lowering of standards must be watched to see that it does not become involved.

On the other hand, we are learning that, with adequate running repairs and the proper assignment of cars to services for which they are suited, considerably more revenue mileage can be obtained from equipment between shoppings than was formerly realized. This is valuable information but its accumulation should stop short of the point which the poet described when he said,

> "It went to pieces all at once,—
> All at once and nothing first,
> Just as bubbles do when they burst."



A Geared Steam-Turbine Locomotive

Pennsylvania, Westinghouse and Baldwin collaborate in developing a 6,900-hp. locomotive with conventional boiler and four rod-connected driving axles

*By J. S. NEWTON**
and
W. A. BRECHT†

THE pioneering direct-drive steam turbine locomotive, now on main line trials by the Pennsylvania Railroad for long-distance high-speed passenger and freight service, offers several inherent advantages to the industry. Compared to the two-cylinder reciprocating locomotive, the geared turbine drive provides: 20% more power from a given boiler; smaller driving wheels and lower center of gravity; uniform torque without reciprocating parts, dynamic augment, and unbalanced forces. The power unit making possible these advantages for the first direct-connected steam-turbine locomotive in this country is the result of new and significant engineering advances. For example: (1) the power unit is a completely self-contained assembly; (2) 9 3-point support avoids transmitting frame distortion to the gear case; (3) a single small lever controls both speed and direction of the locomotive; (4) hardened and ground double helical gearing is used commercially for the first time; and (5) tooth loading of the high-speed pinion is practically double that ordinarily used.

The reciprocating steam locomotive with Stevenson valve gear was introduced over a hundred years ago. Although it has been vastly improved in detail, its essential elements—fire-tube boiler, cylinders, valve mechanism, and linkages, and driving rods—have suffered no fundamental change. Not that many innovations have not been tried. Locomotives have been built with water-tube boilers, compound engines, and poppet valves. While some of them have been successful (and have been adopted), those that departed radically from the simple steam engine have not been adopted, either because they did not prove economical or because of mechanical inadequacy.

In 1937, the Pennsylvania Railroad became interested in the possibility of improving the performance of its standard passenger locomotive by replacing the single expansion reciprocating engines with a geared turbine. After two years of study, Westinghouse and Pennsylvania engineers were convinced that the performance could be greatly improved, and that a good mechanical design would result. However, the cost of making modifications to existing locomotives would be almost as much as the cost of a complete new engine. Therefore, a larger, new high-speed locomotive was studied. Engineers of the Pennsylvania-Baldwin Locomotive Works, and Westinghouse completed the designs and late in 1941 proceeded with the construction of a 6,900 shaft horsepower locomotive for high-speed freight or passenger service. This rating was considered the greatest practicable for rigid frame four driving-axle unit. Some material was on hand before our entry in the war, but construction was stopped and the design changed to utilize non-critical materials. This required a change in wheel arrangement from the 4-8-4 to the 6-8-6 type. Manufacture on a limited scale was again started in the second quarter of 1943, and the locomotive delivered by the Baldwin Locomotive Works to the Pennsylvania in September, 1944.

Geared-Turbine Drive

The Pennsylvania class, S-2 (6-8-6 wheel arrangement) is a geared turbine non-condensing steam locomotive. It has a conventional type fire-tube boiler capable of supplying 95,000 lb. of steam per hour at 310 lb. per sq. in. gauge boiler pressure or 285 lb. per sq. in. gauge, and 750 deg. F. total temperature to the turbine nozzles. With this steam flow, the turbine unit develops

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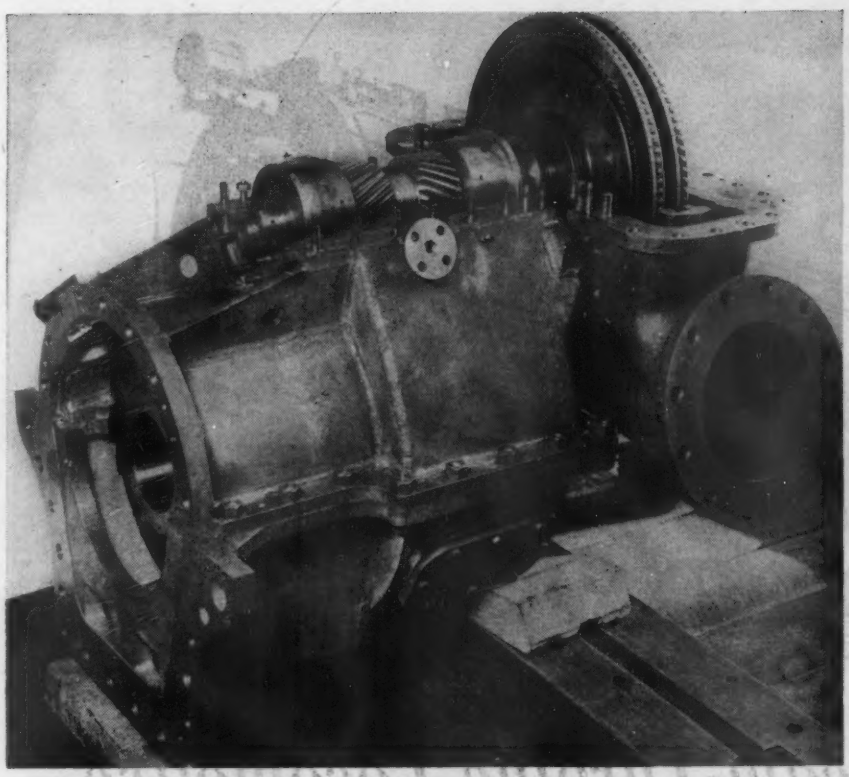
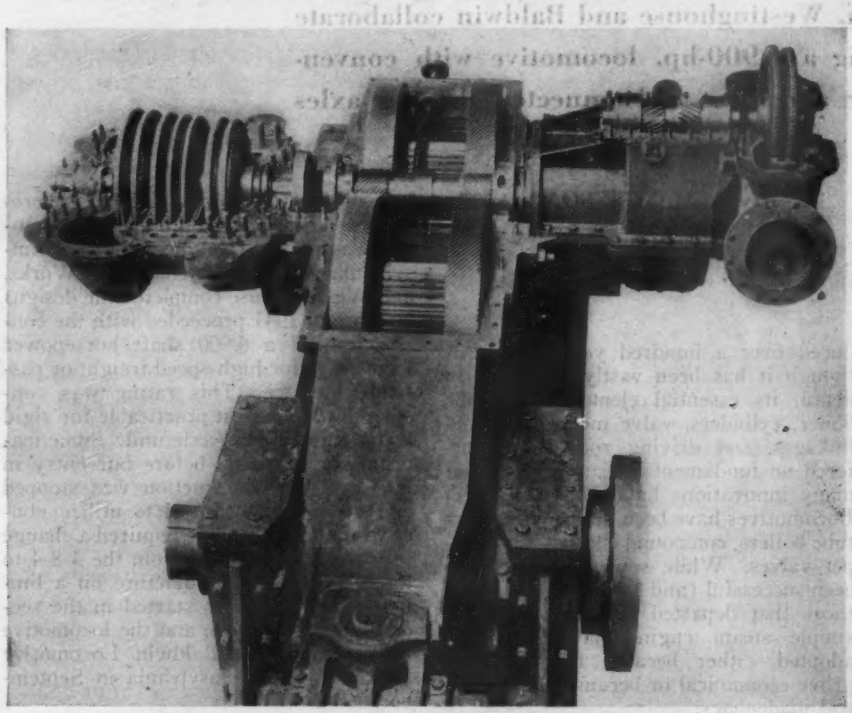


Overhung on an Extension of the Reverse-Gear Pinion Shaft—The Reversing Turbine Consists of a Single Curtiss Stage of 1,500-Hp. Capacity



The Transmission Unit with the Cover Removed and the Turbines in Place

6,550 hp. at the rail at 70 miles per hour; less at other speeds as shown in the horsepower curve, in which both horsepower and tractive force at the rail for a conventional reciprocating engine and a turbine engine have been plotted against miles per hour.

The propulsion unit and controls include a forward turbine, a double-reduction gear for each of the two middle driving axles, flexible cup-drive elements between the final drive gears and the two middle driving axles, a reverse turbine and gear unit clutched to the single high-speed pinion, a pneumatic steam-admission control with overspeed and low-oil-pressure protection, and oil-system auxiliaries including a cooler, magnetic and metal edge strainers, two turbine-driven pumps and control valves.

Both turbines are supported from the gear case which, in turn, is supported from the main locomotive frame, making the power unit a complete assembly in itself. The gear case is supported from the locomotive frame at three points (two at one end of the case and one at the opposite end) in such a manner that distortion of the locomotive frame is not transmitted to the gear case.

The Turbines

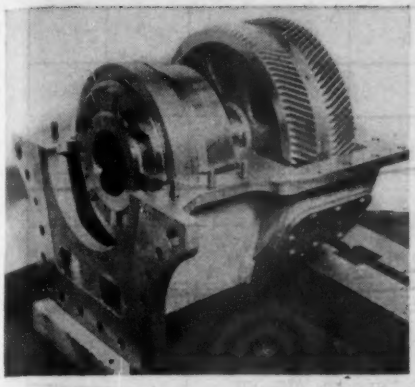
The forward turbine is of the impulse type and consists of a Curtiss stage followed by five full admission Rateau stages. Although especially designed to meet the severe temperature and load changes found in railway practice, it is similar to the high-pressure units of cross-compound marine plants. At 100 m.p.h. of the locomotive the turbine speed is approximately 9,000 r.p.m. It is connected to the high-speed pinion at the reverse-turbine side of the unit, a quill shaft extending through the pinion. Steam enters the turbine through four 3-in. pipes, each pipe being connected to a nozzle group covering approximately 25 per cent of the peripheral area of the Curtiss stage blading. Each inlet pipe is connected to a throttle valve and steam header located at the top of the smokebox. There are four cam-operated valves for control of steam to the forward turbine, each valve controlling the flow of steam to one of the four inlet pipes. The cams are arranged to open the valves in sequence. Close regulation of locomotive power and speed are obtained by opening each valve in small increments.

The reverse turbine is a single Curtiss stage, overhung on an extension of the reverse-gear pinion shaft. Steam is admitted to nozzles in both the base and cover of the reverse turbine cylinder through a single inlet pipe, connected to the reverse throttle valve, also cam-operated, and located adjacent to the forward turbine valves. The maximum locomotive speed in reverse is 22 mi. per hr., at which speed the turbine develops 1,500 hp. at approximately 8,300 r.p.m.

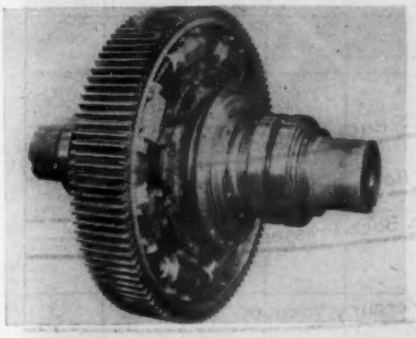
Single Lever Control

The maximum starting tractive force in reverse is 65,000 lb., or 25 per cent adhesion. This is made possible with the small reverse turbine and only a third of the steam flow of the forward turbine by the addition of the reverse gear which multiplies the torque of the reverse turbine by four at the high-speed pinion.

Power in reverse is transmitted to the main-gear high-speed pinion through a hydraulically actuated positive engagement clutch. The forward turbine is solidly connected to the high-speed pinion, but the reverse turbine is engaged with this pinion only during operation in reverse. Engagement or disengagement of the clutch when the locomotive is moving is prevented by a "zero speed" interlock in the pneumatic control cir-



The Slow-Speed Reversing Gear and Clutch Mounted in the Lower Half of the Overhung Gear Housing



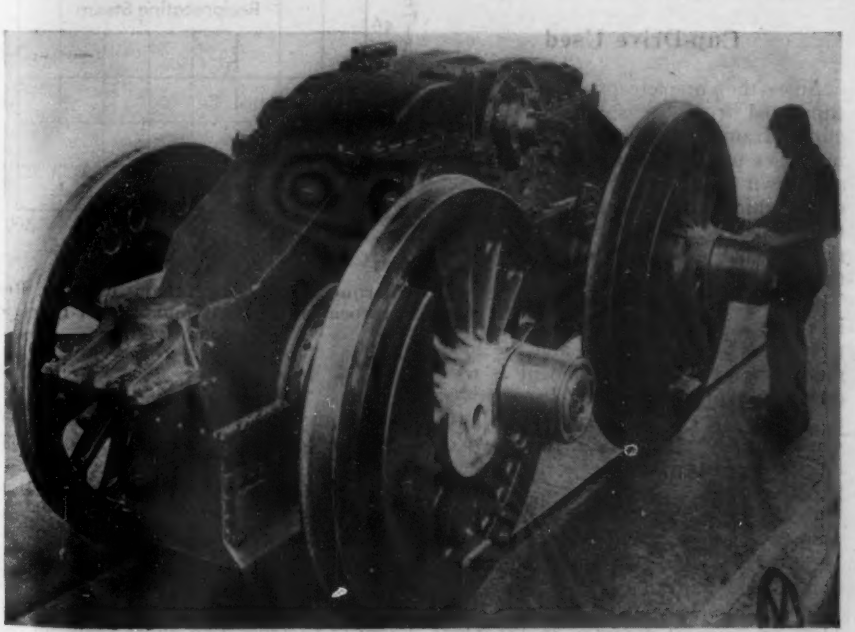
Main Elements of the Drive Are a Spider Which Is Pressed and Keyed to the Shaft, a Quill Which Houses the Axle with Approximately 1¼ In. Radial Clearance, and the Spring Cup Assemblies, Eight of Which Are Mounted Around the Inner Diameter of the Gear

cuit. The reverse turbine, the reverse gear and the movable clutch half are shown in two of the illustrations.

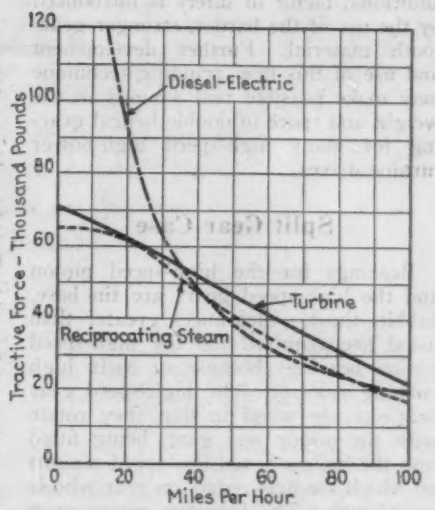
One lever at the right of the cab is used to control speed as well as direction of the locomotive. The complete motion of the lever is the same as that in shifting one's private automobile from "low" gear to "intermediate." The neutral position of the gear shift is the "off" position for the locomotive. Moving into "intermediate" controls the steam flows to the forward turbine; moving into "low gear" engages the clutch and controls the flow of steam to the reverse turbine. The control consists of a forward pneudyne (an air-relay-controlled pneumatic cylinder) located on the engineman's side of the locomotive, a reverse pneudyne on the fireman's side of the locomotive, overspeed and low-oil-pressure-protection valves and a zero-speed interlock. The pneudynes, through a rack and pinion forward and a lever in reverse, rotate the throttle-valve cam shafts and thereby control steam flow to the turbines. If either turbine overspeeds (110 m.p.h. forward, 25 m.p.h. in reverse) or if the lubricating oil pressure falls below 5 lb. per sq. in., the protection valve operates to close either throttle by exhausting the control air to atmosphere. The control was supplied by the Westinghouse Air Brake Company.

Unusual Gearing

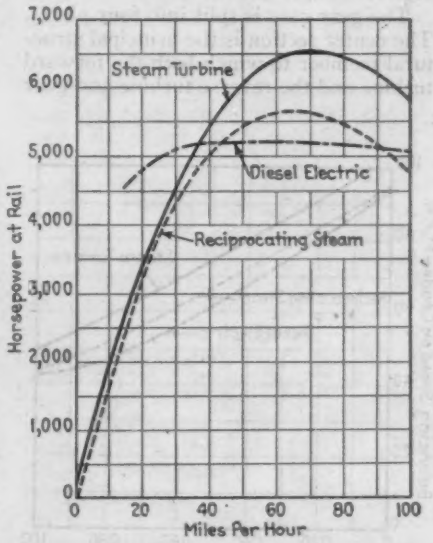
The main gear is a double-reduction unit designed to transmit power to the No. 2 and No. 3 driving axles from a single high-speed pinion. Transmission of equal torques to each of the driving wheels is assured by side rods connecting the four driving wheels on each side. The gear is of the nested type with two double helical high-speed gears, two low-speed spur pinions, two low-speed spur gears, and two cup-drive elements all housed in an enclosed fabricated steel gear case. The high-speed pinion and the second reduction gearing is hardened and ground. This is the first commercial application of hardened and ground double helical gearing. The tooth loading and contact hardness (450 Brinnell) of the high-speed pinion are more than twice the values commonly used. The first reduction gears are hobbed from material also nearly twice the hardness commonly used.



The Transmission Unit Mounted on the Two Directly Geared Axles



Tractive Force at Rail for Steam Turbine, Reciprocating Steam, and Diesel-Electric Locomotives



Horsepower at Rail for Steam Turbine, Reciprocating Steam, and Diesel-Electric Locomotives

New Grinding Method

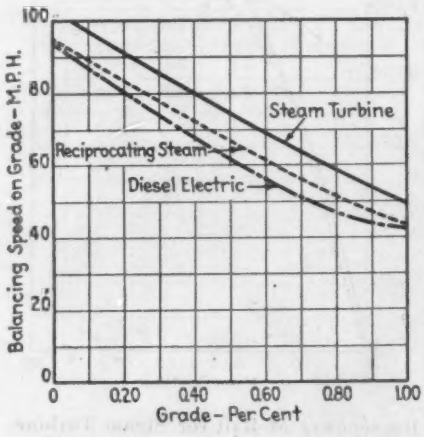
The development of a method of grinding double helical gearing with the extreme accuracy required is the first major advance in this type of gearing since the first gear was built by George Westinghouse in 1909. Grinding is effected with a flat wheel in combination with a novel grinding rig designed and developed by the Westinghouse Steam Division. Although materials of this usual hardness might operate satisfactorily in an application of this kind, an

additional factor of safety is introduced by the use of the harder, stronger gear-tooth material. Further development and use of this new grinding technique may make possible real savings in the weight and space of double helical gearing for many high-speed high-power turbine drives.

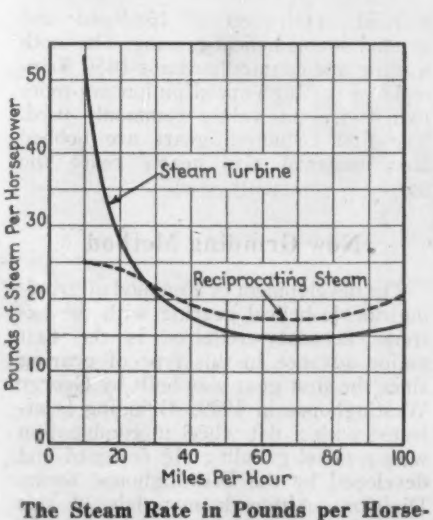
Split Gear Case

Bearings for the high-speed pinion and the high-speed gears are tin base, babbitt lined. Clearances greater than usual are required for the high-speed pinion bearings because of their high rubbing velocity. The high-speed gear bearings are novel in that they rotate with the pinion and gear, being fitted into the hollow-bored low-speed pinions on which the first reduction gear wheels are shrunk. The bearings rotate upon trunnions which center the second reduction pinions. The low-speed gear bearings are of the anti-friction-type duplicate of those furnished as quill bearings for electric locomotives.

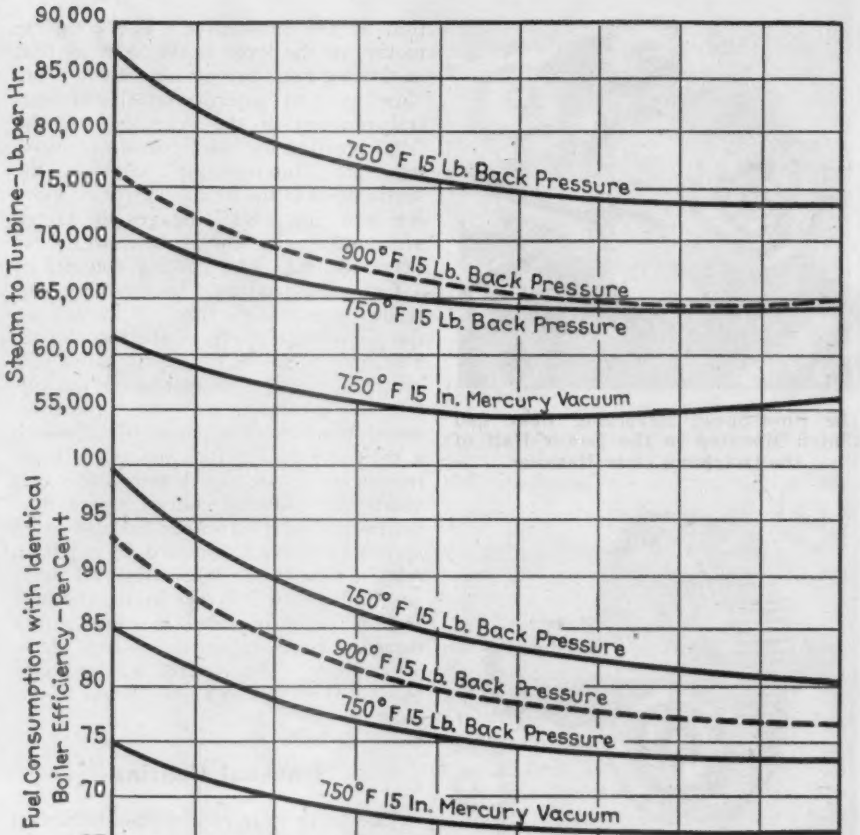
The gear case is split into four pieces. The center section is the principal structural member to which both the forward turbine and the reverse turbine and gear assembly are bolted. The upper section forms a cover for the high-speed gearing and contributes to the crosswise stiffness of the case. The two lower sections, removable to permit dropping the axles, are lubricating-oil sumps as well as enclosures for the low-speed gearing and the cup-drive assemblies.



Balancing Speed on Grades for Steam Turbine, Reciprocating Steam, and Diesel-Electric Locomotives



The Steam Rate in Pounds per Horsepower at Rail for Steam Turbine and Reciprocating Steam Locomotives

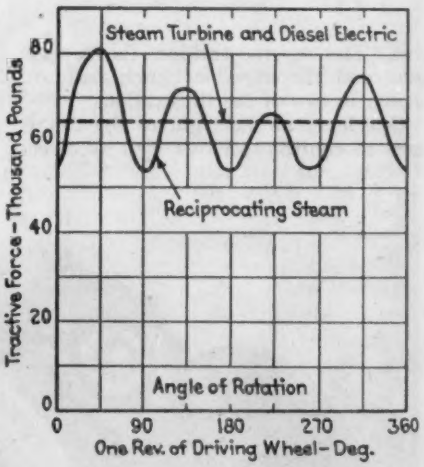


The Effect of Steam Conditions on the Fuel and Steam Consumption of a 6,900-Hp. Geared Turbine Steam Locomotive

Cup-Drive Used

Since the complete propulsion unit is supported from the spring-borne locomotive frame, the second and third driving axles must be permitted to move up and down with respect to the low-speed gears which surround them as the locomotive moves over the rails. This vertical motion of each driven axle must take place while it is turned by its gear. The cup drive which permits this motion is really a misalignment coupling between the low-speed gear and the locomotive axle. This development is used on most main-line electric locomotives, and while the Class S-2 cup drive is the same in principle as the drives used on electric locomotives, it bears little resemblance physically.

On electric locomotives, the traction motors occupy almost the entire space between the wheels, the main locomotive frames and journal bearings being outside the wheels. The cup-drive assemblies are usually mounted in the plane of the driving wheels. On steam-turbine locomotives with side rods it is necessary that the locomotive main frame and the cup drive be between the wheels.



Torque Curves for Steam Turbine, Reciprocating Steam, and Diesel-Electric Locomotives

The Class S-2 cup drives occupy the centers of the low-speed gears and are on the longitudinal centerline of the locomotive. They are compact assemblies, as is shown by the photograph taken with the enclosing cover removed. The "quill" becomes two short seats on the

(*Continued on page 349*)

Let's Make Transport Pay Its Own Way

Railroaders have the duty to arouse Americans' self-interest in continuance of good railway service — which can come under private enterprise, only if all transport is made as dependent as the railroads are on cash from customers instead of taxes

By GUSTAV METZMAN
President, New York Central

THERE are millions of men and women who have in America's railroads a stake of which they are only partially aware. What they think and do has a profound influence on the railroads. We get an idea that it would be good for the country and for the railroads if certain things were done, but we have to convince other people if we are to get anywhere. Our every task has these two aspects: What have we done? How well have we told others about it?

In this war we have done a good job. That job was not done in a day. We did some post-war planning, beginning 25 years ago. We studied the mistakes of World War I and figured how we could avoid them. Our country can be thankful for our mutual friend, Mike Gormley, whose lectures at the Army War College aided in developing the Transportation Corps and its record of distinguished service.

Hard work, efficient work and co-operation have made success in our war job possible. Right now, during this winter, we are probably in the midst of the hardest part of our war job—we hope we will be "over the hump" soon. But our properties will be maintained to stand the load and all railroad men are going to do their part. With the continued splendid co-operation of the government and the shippers, we can keep it up to the end.

Informed Public Opinion

World War I taught American railroads a lesson from which the whole nation is benefiting today. Following the return of the roads to private management, capital expenditures averaged five-sixths of a billion dollars annually for many years. As a result of this "pre-war planning" the railroads had adequate facilities—and though able to obtain only comparatively small plant additions after 1940—the railroads of America were ready to fight and win the critical battle of transportation.

We can be glad that people know the story of railroad war-time performance. A recent public opinion survey shows the people almost unanimous—94 per cent of them—in giving the railroads credit for having done a good job during the war. In 1941, 50 per cent of the people said the government should take over the railroads in the event of war. Now, only 15 per cent favor government taking over the railroads for the duration of the war.

A war job well done, and informed public opinion about it, won good will for the railroads. Why not apply the same success formula to the problems we shall face tomorrow? Returning to the ways of peace, we shall have stiff competition. To meet it, to provide railroad transportation based on post-war standards, not pre-war standards, our railway plants will need a lot of improvement. Not so much just repairs. What we need most is modernization—to take advantage of all the new things we have learned during the war years, and some of the things we learned before but did not have money to pay for.

Will Improvements Materialize?

We shall need a lot of capital funds. Capital funds are the life blood of enterprise. They are the wherewithal to buy the tools of production. The building of the tools provides jobs, and the use of the tools provides more jobs. Here is a story to tell the American people. The people look upon jobs as America's No. 1 post-war problem. Here are real jobs, in the railroad and railroad supply industries—the kind of jobs that continue and grow, because they are truly productive. The railroad improvement program, dropped into the post-war industrial pool, would spread employment and prosperity in ever-widening circles. This is just the opposite of "boon-doggling," and the opposite of unnecessary public works.

There is no sound reason why there should not be a great railroad improvement program after this war. But there is a big question. The question is, will government policies permit this improvement program to materialize?

Will our public policies, as laid down by federal, state and municipal governments, encourage the flow of private *capital funds into railroads, or will they discourage that flow and dry it up?*

This big question can be likened to dark clouds on the horizon. There are several of these clouds. One of them, perhaps the biggest one, is the threat of uneconomic handling of government investments in competing transportation facilities.

Government—federal, state and municipal—has poured huge sums of capital out of the public treasury into transportation improvements that compete with railroads. In the last 20 years or so, more money was spent on fixed transportation plant other than railroads than had been spent on the whole railway plant in the United States in more than a century. By far the greater part of the money spent on these newer ways of transportation came from taxes, whereas 98 per cent of the money invested in railroads was the private funds of private investors. And let us not forget that 75 per cent of the war-time transport load, if we exclude local cartage, has been carried by the railroads—by facilities built with private capital.

Public transportation facilities are necessary, but the commercial operators who use these public facilities in many instances do not pay their way. That is, they do not pay enough to maintain their share of the facility and amortize its cost, although the facility is just as much a part of their business as track is part of the railway business. The railroads, on the other hand, own and maintain their tracks and terminals. They pay heavy taxes on them—in Chicago alone the yearly railroad tax bill is close to $9 millions.

Our country's interest will be served by policies that give the investors in transportation facilities a chance to earn a modest profit and get their money back—whether they are investing private funds, or paying taxes which become government investments. If our government-owned transport plant—our superhighways, our waterways and our airports—were made really self-supporting, these developments could occur free from appropriations and from politics. Greater use of these facilities would automatically increase the financial returns—and provide a base upon which to finance additions and improvements.

Equality of Opportunity

Private transportation costs money and government transportation also costs money—in either case it is the American citizen who pays. A policy of self-supporting transportation protects the American citizen against the loss of his private investment in private transportation and against the wasteful loss of his tax dollars invested in public transportation. Under such a policy, private investment in the railways can live alongside of government investment in

This article is a condensation of an address presented on April 5 to the Western Railway Club, Chicago.

other forms of competitive transportation.

The railroad industry does not desire public grants or subsidies. We much prefer free enterprise in all business activity. But unless we are given equality of opportunity with our competitors, under a policy of self-supporting transportation, I do not know how long the railways can get along without public aid, and still provide the service the nation needs in peace and maintain a plant immediately available in case of war. Public grants for railway improvements, tax exemptions on railway property, or other similar measures, may be forced by circumstances, if sound policies are not adopted. It is certainly much simpler, and more equitable, to put public investments in *all* transportation on a self-supporting basis.

On the question of government capital in transportation—transportation of all kinds—the public opinion survey I have mentioned gives us railroad men something to think about. The people have not been given enough facts. There is a widespread impression that railroads have received more government help than other carriers. The public does not have a clear enough picture of how transportation facilities are financed and who pays for them. The public believes in fair competition in transportation, but a majority of the people erroneously think that we already have fair competition—that all the competing forms of transportation have been treated fairly.

Unsound Taxation Policies

What should we railroad men do about this? Let us take a leaf from our war-time experience. By word as well as deed, we have impressed upon the American public the fact that railroads fight best under private management—under government *co*-operation, rather than government operation. Let us similarly convince Mr. and Mrs. America that they will get the kind of railroad transportation they want, and protect their tax and investment dollars, by encouraging the policy of self-supporting transportation. For only under such a policy will new capital be ready to build the finer trains of tomorrow. And only under such a policy will the railroad investments that underlie so many savings accounts and insurance policies continue to yield an adequate return.

How many people have you *convinced that a policy of self-supporting transportation is in the public interest?*

Again looking at the horizon, we see another dark cloud—unsound taxation policies. We shall have sound taxation policies when we educate the American people about the fundamentals of taxation. Sensible tax laws will help people because they will make it easier for business to provide jobs. How many people have learned about taxes from you?

There is a cloud on the horizon in the form of land-grant rates on military traffic carried for the government. Last March, Mr. Jeffers told you about land grants. We know that the lands granted to the railroads by the government had a value, when granted, of about $125 millions. We know that up to the end of 1944, land grant deductions on government traffic totaled $1,121,000,000. The railroads have paid back the value of the government land grants nine times over. Currently they are paying once again every five months. And that means an indirect charge on millions of shippers, millions of travelers, millions of railroad investors, savers and insurance policy holders.

Looking at our opinion survey, we find that only about half the American people have ever heard of land grants. Only about one-fifth of the people think the railroads have made any repayment; one-eighth say the railroads have *not* repaid the government. Have *you* made use of *your* opportunities to tell your friends about land grants?

Problem Within a Problem

Every problem we have in the railroad industry is really two problems. First, the problem itself; and, second, the job of telling the American people, with honest facts and straight reasoning, about it. Our policies deserve to succeed, only if and to the extent that they serve the nation's best interest. This is something to keep before us, when we are forming policies. Then, let us show the American people that our policies will serve their best interest.

The best start is the point of common interest with the man or group to whom you are talking. "The people" to whom we refer are not just an unorganized mass. The great railroad industry represents many different things to many different people. Here are a few of them.

The railroads are of direct interest to investors and savers. Stockholders of Class I Railroads number 872,000. Of the funded debt of the American railroads, well over one-half is held by institutions—insurance companies, banks, educational institutions and foundations, who hold their securities for the benefit of others. Life insurance companies, for example, hold their railway securities—$2¾ billions of them—for the benefit of the people whose lives are protected by policies of insurance. There are 159 million life insurance policies in force in this country today—on the average, more than one policy for every man, woman and child.

The railroads are of interest to the taxpayer, for, as taxpayers, the railroads contribute heavily to the support of government—federal, state and municipal. In Chicago, in Cook County, and in the whole State of Illinois, the railroads pay about 5 per cent of all the property and franchise taxes collected. And no intelligent taxpayer wants to see such a sharer of his burdens killed off by unsound policies.

The railroads are purchasers on a huge scale of equipment, materials and supplies. They bought, in the year 1941, about $1½ billions worth; last year, 1944, nearly $2¼ billions worth. Their purchases include almost every kind of article produced by American industry.

The railroads provide jobs for labor. As employers, railroads are now the source of livelihood for their 1,425,000 employees. Approximately the same number in the equipment, materials and supplies industries are indirectly dependent upon railroads for their employment. Here are well over two million workers—and many more, among their families—who should be demanding sound transportation policies to protect their livelihood.

Labor's Stake

The railroads are of interest to shippers and travelers. The war has proved that, regardless of the development of other forms of transportation, the country cannot get along without railroads. This is true during peacetimes, too. Industries can ship *some* of their products by highway, water or air, but none of those other agencies is willing to carry anything, anywhere, at any time. Our shippers and travelers will fight for sound transportation policies, once they have been shown that sound policies will serve the interest of the user of transportation in the long run.

We railroad men have a big job cut out for us. Telling the people what they can do about railroad problems, and why it is to their interest to do it, is a part of our job. The keynote that fits into the American enterprise system is *self-supporting transportation.*

* * *

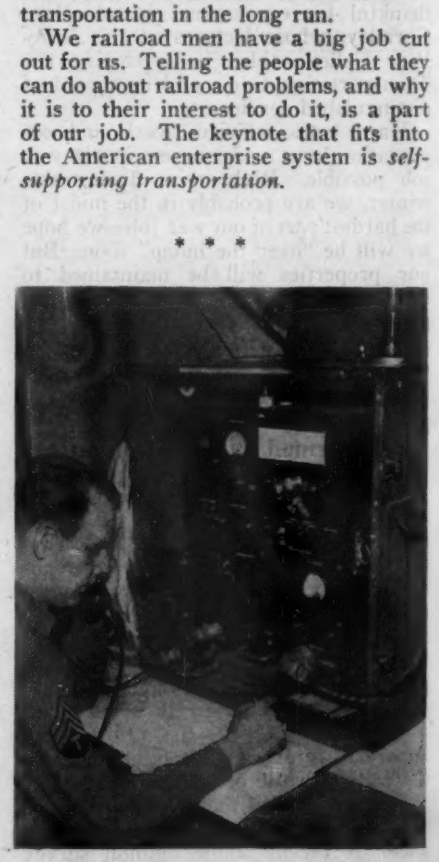


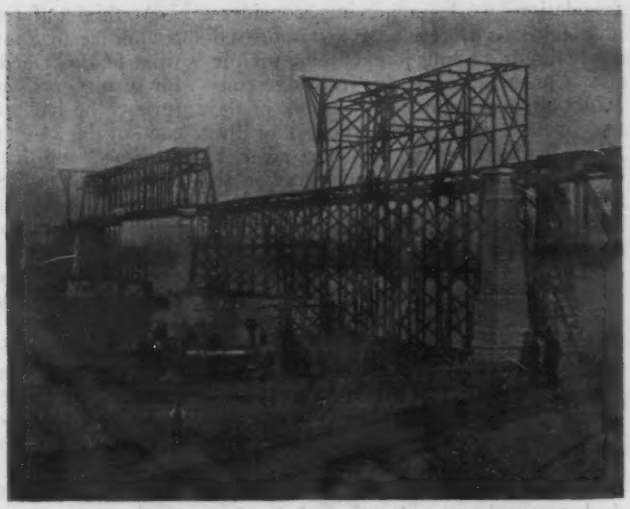
Photo Courtesy, Sixth Army Group, France

Radio Useful to M. R. S.

When ground communication lines are out of order, because of bombing, enemy demolition or floods, radio is used to maintain railway supply lines. (Above) T/4 Willard A. Delaware, of Madison, Me., formerly employed by the Railway Express Agency, is operating the radio station for the 794th Military Police Battalion, in southern France.

The First Steel Bridge Recalled

Outstanding five-span structure, 1,570 ft. long, built by the Chicago and Alton in 1879 over the Missouri river at Glasgow, Mo., almost forgotten, as has been its steelmaker



The First Steel Bridge, Under Construction in 1879

By H. B. VOORHEES

Chief Executive Officer
Alton Railroad

THE first steel bridge to be built in this or any other country was constructed over the Missouri river at Glasgow, Mo., by the Alton. As one of the pioneer Western railroads, it began building its lines at a time when the waterways afforded the principal means of transportation, and when the settlements were largely along the rivers.

The first segment of this road, from Springfield, Ill., to Alton, O., was chartered in 1847, almost 100 years ago, and was completed in 1852. By October of the following year the road was extended as far north as Normal, Ill., just north of Bloomington, Ill., and a year later as far north as Joliet, Ill., where a connection was made with the Chicago & Rock Island, thus giving it access to Chicago. There were no rails between Alton and St. Louis, Mo., at that time, but the Alton operated a packet boat between those points, and by that means was the first to provide a service between Chicago and St. Louis for the handling of freight, passengers, and express.

Link in New Line to the West

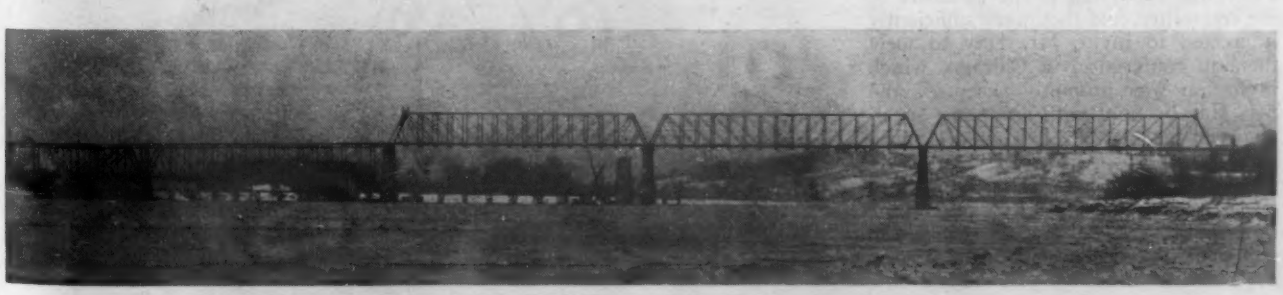
Somewhat later it was decided to extend service westward in order to open the State of Missouri to further settlement, and the line from Roodhouse, Ill., as far west as Mexico, Mo., with a branch to Cedar City, Mo., just across the river from Jefferson City, Mo., was completed in 1872.

On April 10, 1877, a group of citizens held a meeting at St. Louis, Mo., to organize a company to construct a railroad from Mexico, Mo.—at that time the western terminus of the Alton—to Kansas City, Mo., a distance of approximately 160 miles. The Kansas City, St. Louis & Chicago Railroad Company was organized and incorporated, and John J. Mitchell was elected president. Financing was promptly arranged and, with equal promptness, the prospective railroad was leased in perpetuity to the then Chicago & Alton Railroad Company, which agreed, among other things, to construct the railroad track, which was to be laid with steel rail; to construct the bridges, which were to be built of iron, including a long bridge over the Missouri river at Glasgow, Mo.; and to build the stations, and other necessary appurtenances. The early records show that the lease required that a suitable ferry should be operated over the Missouri river until such time as the construction of an iron bridge could be completed, and, as a matter of fact, such a ferry service was inaugurated with the boats *J. C. McMullin* and *W. H. Christy*, each having a capacity for handling six or seven cars and a locomotive.

When it was decided to build the railroad from Mexico to Kansas City, T. B. Blackstone, who was president of the Chicago & Alton from 1864 until 1899, employed General Sooy Smith as chief engineer, to design and supervise the construction of the bridge across the Missouri river. General Smith was well qualified for such an assignment. He had worked his way through Ohio University, at Athens, and was graduated with distinction in 1849. Immediately following graduation, he received an appointment to West Point Military Academy, graduating with the class of 1853. After graduation he promptly resigned from the Army and became connected with the engineering department of the Illinois Central. Subsequently, he taught school in Buffalo, N. Y., for a short time, but in 1854 he resumed the practice of civil engineering, forming a partnership under the name of Parkinson & Smith, which firm made the first survey for the International Bridge at Niagara Falls, N. Y.

With the outbreak of the Civil War he was mustered into the Army as a colonel, and was later advanced to the rank of brigadier general. Because of illness, however, he resigned from the Army in 1864, and again resumed his engineering practice, devoting much of his time to bridge construction and deep

This article is derived from a paper presented before the Newcomen Society at Chicago.



General View of the First Steel Bridge—Over the Missouri River at Glasgow, Mo.

foundation work, achieving considerable fame as a result of his improved methods for sinking foundations, for the use of pneumatic caissons in bridge construction, and for his sponsorship of the use of steel in the construction of the Alton bridge over the Missouri river at Glasgow—all railroad bridges prior to that time having been built of iron. Building this bridge across the Missouri river was no small project for those days, contemplating, as it did, the construction of five 314-ft. Whipple truss spans, with 1,140 ft. of approach spans and 864 ft. of wooden trestle.

Seek Metal Better Than Iron

When the American Society of Civil Engineers convened in Chicago in 1872, one of the important subjects on its docket was the consideration of the difficulties which attended iron bridge construction. Iron bridges at that time were having a hard struggle to compete with the best wooden bridges, because of the tendency of the metal to crystallize under heavy strain, especially when accompanied by shock. Failures of well-designed iron bridges were not uncommon, bringing them into disrepute, and turning the attention of bridge engineers of the day to the necessity for correcting their defects by the substitution of some other material which would be free from the weaknesses inherent in iron.

At the A. S. C. E. meeting referred to, General Sooy Smith offered a resolution providing for the appointment of a committee, whose duty it would be to secure from the United States government an appropriation for the building of a first-class testing machine—which was accomplished—and also to select a committee of Army, Navy and civilian engineers to make comprehensive tests to determine the quality of various metals which might be used in the construction of bridges. The resolution was carried, and General Smith was made chairman of the committee, the other members including General McClellan, General Bernard, Albert Fink and James B. Eads, of subsequent St. Louis bridge fame.

Some time after the appointment of the committee, General Smith received a letter from A. T. Hay, who lived in Burlington, Ia. Mr. Hay wrote that for 12 years he had been engaged in a quiet way in making tests of steel and iron, and that he had succeeded in making various new alloys of iron and steel which showed remarkable qualities. The letter was submitted to the members of the committee, and they were sufficiently interested to invite Mr. Hay to meet them in conference, in Chicago, which invitation was promptly accepted, and Mr. Hay brought with him some specimens of his new steel. General Smith reports that the board was so intensely interested that it spent from two o'clock one afternoon until bright daylight the next morning examining the specimens, and that his own curiosity was aroused to a white heat by Mr. Hay's discoveries.

At this conference, Mr. Hay told the committee that for 12 years he had used what he described as an electric furnace for fusing ores, and that by means of the furnace he had formed compounds with each of the 14 metalloids in various proportions, and had carefully tested the results. General Smith was so much interested in Hay's disclosures that he went to Burlington to see his apparatus, which consisted essentially of two concentric cylinders of sheet iron, the inner cylinder of which was lined with firebrick. The inner cylinder was not more than 2½ ft. in diameter and was about four or five feet high. Between the inner and outer cylinders, Hay had coiled wires in positions which he had learned through experiment were correct for his purpose. In just what manner the current was used in aiding the fusion of the ores, General Smith was never able to discover, but, in any event, the process achieved results and Hay demonstrated the fact that he was able to produce a steel with tensile strength varying from 70,000 to 90,000 lb. per sq. in., and with elastic limits between 48,000 and 52,000 lb.

Following his visit to Burlington, and after further investigation and tests of the steel produced by Mr. Hay, General Smith recommended to Mr. Blackstone, president of the Chicago & Alton, that the Glasgow bridge be built of Hay steel, and received his approval. After this decision was reached and it become known to some of the best iron bridge builders in the country, they stood aghast at such an undertaking. For example, Mr. Pope of the Detroit Bridge Company, said, "My God, Smith, you are not going to build a steel bridge, are you?" The answer was, "Certainly, why not." Mr. Pope promptly responded by saying, "The first frosty morning that comes, it will go into the 'drink'."

In view of this prophecy, Smith and Blackstone doubtless found some comfort in an otherwise unfortunate accident. During construction, one of the 314-ft. steel spans fell, about six hours before its erection was completed, due to a failure of the falsework. The top chord was 102 ft. above the water, and about 160 tons of steel fell into the Missouri river, but while many of the members were bent and twisted into all sorts of shapes, none of them showed a fracture.

Work on the foundations and piers of the new bridge was started in May, 1878, and was completed in March, 1879. The more than 800 tons of Hay steel used in the bridge were made at the Carnegie Edgar Thompson Works, under the personal supervision of Mr. Hay.

The bridge was designed to carry two 65-ton engines, followed by a load of 1820 lb. per lin. ft., and performed its purpose faithfully, showing no signs of weakness during the 20 years it was in service. It was in good condition when replaced in 1899 by the present structure, designed to carry a heavier loading.

Steelmaker Forgotten

Abram Tuston Hay was a descendant of a prominent Scottish family, and was born in Montgomery county, Pennsylvania, in 1826. His family migrated to Franklin county, Ohio, in 1835, where the young man helped his father and brothers work their farm. Apparently he had a real thirst for knowledge and education, and it is reported that "he studied by the light of a log fire in the family living room at the close of his day's toil." At the age of 20 he entered Central College, Ohio, and later taught school. He learned telegraphy, then in its infancy, and held several unimportant jobs.

After he moved to Burlington about 1850 he engaged in the practice of law, but was compelled to abandon that profession by reason of failing health, and thereafter devoted his time to chemical, electrical and metallurgical research, which led to the development of the steel used in the Glasgow bridge.

After working so long upon his invention, he lived to see his steel accepted by the mechanical world, but in January, 1895, he died in obscurity, without financial or other reward for his genius. It seems quite possible that the steelmakers of his day profited by his findings, without giving him credit or paying royalties, but, in any event, he died without fame, and has even been forgotten by the men who build bridges.

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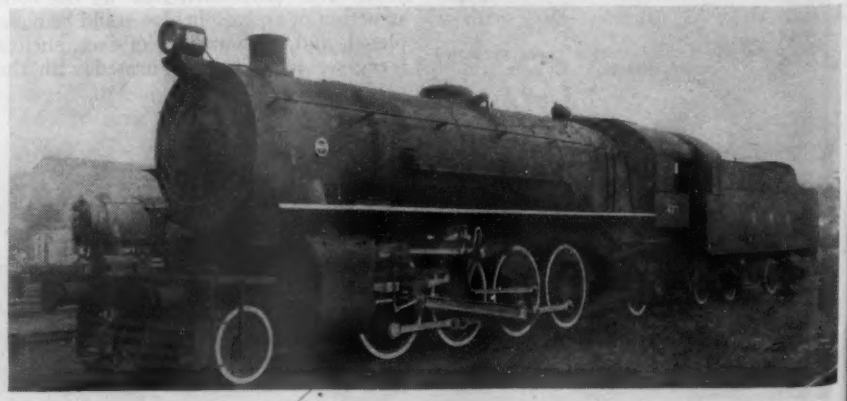


India Will Get This 1,200th Locomotive Built by Baldwin in 1944

Justice Dept. Regulatory Theory Analyzed

An effort to reestablish rate-making conditions which conclusively demonstrated their failure 50 years ago — An attack on principal factor in efficient war transport

By R. V. FLETCHER

Vice-President, Research, A. A. R.

I AM counsel of record in a proceeding instituted by the Department of Justice at Lincoln, Neb., in which the court is asked to dissolve the Association of American Railroads and the Western Association of Railway Executives, as well as to condemn the action of the principal western railroads in adopting certain cooperative measures in their effort to promote the public interest. The proprieties recognized by reputable counsel will not permit me to discuss elsewhere than in court the issues involved in that proceeding. I am privileged, however, I assume, to refer to statements made in public addresses by members of the Anti-Trust Division of the Department of Justice, dealing with alleged violations of law.

I am satisfied that the views I express are shared by the thoughtful spokesmen for highway, water, air and pipe line transport. I say this for the reason that all these useful and competing forms of transportation are regulated industries affected with the public interest, subject to public control as to rates, services and practices. By reason of such public regulation, they differ fundamentally from forms of business which are recognized as essentially private. These private industries, comprising the great bulk of our business enterprises, are, in normal times, free to fix their own prices, expand or restrict their activities and select their methods of production and distribution. In these lines of endeavor, the law has conceived it to be of the first importance that the forces of unrestricted competition should be given full effect, since this is the only protection which the public has from exorbitant prices.

Where Competition Won't Work

But from the very beginning of our legislative consideration of the subject of monopolies and restraints of trade, a distinction has been made between private business and those forms of activity which are quasi-public. In many respects and unavoidably, many public utilities are monopolistic. Any community that has only one railroad, any city that has only one telephone system, cannot look to competition as a protective force against unfair prices and discriminatory practices. Early in our history, it was recognized that these public utilities, by reason of the essential service they perform, and for the further reason that in many cases they furnished the only service available, should be regulated by public authority, rather than by the natural play of competitive forces. And so, we created public service commissions in the several states, and the Interstate Commerce Commission in the federal field, to control the prices of these utilities, so that only reasonable and nondiscriminatory charges might be collected.

Competition cannot be the controlling factor in the case of a type of business regulated as to prices and practices by public authority—since the only motive for extending legal protection to unrestricted competition is to insure fair prices. Where prices are prescribed by public authority, what room is left for the play of competitive forces to the same purpose?

Rate "Bureaus" Long Accepted

This is not to say that competition is no longer present in the operation of railroads. With respect to features of railroad operation not regulated by public authority, railroads still compete with a degree of alacrity that sometimes, I fear, transcends the bounds of prudence. Reference may be made, in this connection, to the character of service, courtesy, promptness in settling just claims, as well as to personal contacts which are often persuasive. But, so far as rates are concerned, carriers may not compete in the ordinary sense, since these rates are carried in tariffs filed with the appropriate regulating authority and must be observed, under severe penalties for failure. To prate of competition in the making of rates and charges, in the case of transportation companies, is but to cast a loving and lingering look back to the days of rebating, secret rate-cutting and ruinous discrimination. Generally speaking, with some exceptions to be noted presently, our regulating authorities and the courts have understood and applied these distinctions.

From the very beginning of its long and honorable career, the Interstate Commerce Commission has recognized the need for cooperative effort in the matter of initiating rates, and has shown its appreciation of the limitations upon the principle of competition as an orderly means of regulation. In the Commission's first annual report, in referring to the existence of rate associations, the Commission took occasion to say:

> "But what perhaps more than anything else influenced the formation of such associations and the conferring upon them of large authority, was the liability, which was constantly imminent, that destructive wars of rates would spring up between competing roads to the serious injury of the parties and the general disturbance of business."

In the second annual report, the Commissions said, among other things:

> "If it is important to the public that a railroad once constructed should be maintained, the ability to make charges that will render its maintenance possible, is also of public importance. When, therefore, the rate sheets are such that reasonable returns are not probable, a public injury is threatened, and the injury is accomplished when the natural result of bankruptcy is realized. It is of little moment that in the meantime the public reap an apparent benefit from the very low rates; the apparent benefit is almost always illusory, for the unremunerative rate sheets are seldom evenly balanced; they favor particular towns or particular interests, or they go spasmodically up and down, and thus unsettle prices; they are commonly made quite as much to injure competitors as to benefit the party making them, and it will generally be found that reasonable rates adjusted equitably over the whole field of service would have been as much better to the community as to the carrier itself."

The Commission, in this significant report, in discussing the question of whether rates could be made by each railroad independent of all the others, or whether it would be wiser and more in the public interest that there should be some measure of cooperation in proposing rates, said:

> "But the voluntary establishment of such extensive responsibility would require such mutual arrangements between the carriers as would establish a common authority which should be vested with power to make traffic arrangements, to fix rates and provide for their steady maintenance, to compel the performance of mutual duties among the members and to enforce promptly and efficiently such sanctions to their mutual understanding as might be agreed upon."

These expressions and particularly the one which I have just quoted, were rendered prior to the decisions of the Supreme Court in the Trans-Missouri and Joint Traffic Association cases, which, for the first time and somewhat to the surprise of the legal profession, held that railroads were subject to the anti-trust laws.

Favoring Big Shippers

In the third annual report of the Commission, rendered as far back as 1889, will be found a discussion of the desirability of uniformity in the matter of adopting freight classifications. There is also in this report an interesting discussion of the question of whether railroads should be permitted, in the public interest, to bid for traffic by reducing rates at the demand of particular shippers.

This report points out graphically how the so-called principle of "inde-

This article is an adaptation of an address by Judge Fletcher to the Executives Club at Chicago on January 5. Not all the citations of authorities made by the speaker are included in the article as it appears here.

pendent action" operates to the disadvantage of small shippers, in view of the economic power of large shippers, who can often compel the grant of favorable and discriminatory rates.

In the ninth annual report of the Commission, there was a discussion of the Trans-Missouri case, then pending in the Supreme Court on appeal from the Circuit Court of Appeals, in which it was said that traffic associations should not be organized in such a way as to prevent members from taking individual action. The traffic associations and bureaus now in existence recognize the right of carriers to take individual action and such action is never penalized in any way.

Bureaus Found Useful

In the twelfth annual report of the Commission, that body points out that it was a self-evident proposition that where traffic moves between two points by the same carriers it must necessarily move at the same rate. Competing lines, it is said, must maintain substantially the same rates. In discussing the matter of whether conferences among railroads are desirable before rates are initiated, the Commission said:

"It is extremely difficult to see how carriers can intelligently adjust their rates so as to fulfill the general requirements of the act without the right to organize in some form for the purpose of obtaining necessary information and applying that information as occasion requires. To one familiar with actual conditions it seems practically out of the question to establish rates that are relatively just without conference and agreement. . . . Certainly it ought not to be unlawful for carriers to confer and agree for the purpose of doing what the law enjoins."

I know of no clearer, more concise and more authoritative statement anywhere than this extract from the twelfth annual report of the Commission, rendered after the decision of the Supreme Court in the Trans-Missouri and Joint Traffic Association cases.

In 1921 the Senate passed a resolution directing the Interstate Commerce Commission to inquire into the organization, management, and control of the Transcontinental Freight Bureau for the purpose of determining, among other things, whether the operation of the bureau in any manner stifled competition. The Commission held extensive hearings with reference to the matter and in its report to the Senate, the Commission said the bureau did not adversely affect competition. On page 279 of the report will be found this language:

"It is manifest that the Transcontinental Freight Bureau as at present organized and operated serves many useful purposes, promotes economy and efficiency, and is of advantage to shippers as well as to carriers. The need for some organization of this character in the transcontinental traffic field is demonstrated upon the record. The mitigation or cure of such defects and imperfections in the operation of the bureau as experienced has disclosed, or as may develop in the future, should be the object of constant solicitude on the part of those who best know them through their intimate acquaintance with and responsibility for the conduct of its affairs. It is abundantly shown that operation of the bureau tends to obviate or remove the discriminations as between persons and localities which the law condemns. . . .

"Upon the record in this investigation we are of opinion and find that the maintenance and operation of the Transcontinental Freight Bureau are not in violation of any provision of the Interstate Commerce Act.

In the *Fifteen Percent Case*, decided in 1931 and reported in 178 I. C. C. 539, among other things, it is said:

"The new competitive conditions made it necessary, also, for the railroads to cooperate more efficiently with each other and reduce the waste, both in service and in rates, which has marked their own competition. That this waste is of very large proportions is clear. Many specific instances have been brought to our attention. That it can be minimized we also have no doubt, but that this will require a greater degree of cooperation than the railroad executives have yet been willing to put into practice is plain."

The late Commissioner Eastman had been recognized not only for his great ability but for his impartial and fearless estimate of transportation conditions and policies. Testifying before the Senate Committee on Interstate Commerce in June, 1943, Mr. Eastman, among other things, in explaining the work of rate bureaus, used this language:

"It is important for you to keep in mind that if the rate bureaus and associations did not exist and rate initiation were wholly the function of the individual railroads, there would be thousands of communities which would, except for public regulation, be at the mercy of a single railroad. This situation would, of course, be intensified by the further unification of railroad carriers which is permitted and in fact encouraged by the Interstate Commerce Act, under provisions which bar the application of the anti-trust statutes. . . .

"It must be evident to any reasonable man that the carriers cannot respond to all the duties imposed by law, if each individual carrier acts in a vacuum. It is a situation, under all the conditions, which plainly calls for consultation, conference, and organization and for many acts of a joint or cooperative character; and this seems, in effect, although some of the testimony might suggest otherwise, to be admitted by the Department of Justice. For my own part, I have no doubt whatever that organizations of carriers, such as have been described by the witnesses which have preceded me, in general serve a very useful purpose and are desirable in the public interest. They save much trouble for the shippers, as I believe the shippers will tell you. . . .

"If the rate bureaus and the like had, over their long history, been the source of grave abuse which prejudiced seriously the interests of the shippers, you may be sure that long since there would have been an uprising and that this situation would have been made clear to you by a heavy tide of complaints pouring into the Commission and into the Congress of the United States. If there has been or is such a tide, it has somehow escaped my knowledge."

We say, therefore, that the Interstate Commerce Commission and its best informed and most influential spokesmen have recognized the value of consultation and cooperation among the railroads in initiating their rates.

How Bureaus Serve Public

The so-called rate bureaus and rate conferences are not vested with power to make rates over the protest of railroads maintaining such bureaus and organizations. There is not a rate bureau in the United States that does not fully recognize the right of an individual railroad to take "independent action," contrary to the judgment of the majority. The so-called rate bureaus exist only for the purpose of conference, discussion and consultation. They hold public hearings, at which shippers are invited to appear and present their views as to desirable rate changes. They furnish a convenient medium for the purpose of hearing all interested parties as to the possible effect of a suggested rate change upon the competitive situation.

The rate structure of the country is a complicated affair. If a rate change is proposed by a shipper or by a railroad, it is highly desirable that the matter should be given careful consideration before this rate change is put into effect or embodied in tariffs filed with the Interstate Commerce Commission. It may very well happen that such a change would produce a discrimination contrary to well settled principles of rate-making and in many cases contrary to actual findings and decisions of the Interstate Commerce Commission. No possible harm to the public interest can result if this rate change is discussed with the shippers and interested railroads, so that everybody will understand precisely what is involved and what consequences may result from the rate change.

If, for example, a railroad serving St. Louis but not Chicago proposes a change in rates from St. Louis to New York, it is clear that interests centering in Chicago and railroads serving that city should have an opportunity to discuss the effect of such a change upon the business both of shippers and of carriers. If, after a full discussion of the matter, the railroad proposing the change is convinced that such change is desirable, nothing in the organization of these rate bureaus prevents this individual railroad from taking "independent action" in the establishment of any rate.

Justice Dept. Approved

All rates must be filed with the Interstate Commerce Commission and that body has the right to suspend any rate submitted to it, if, as the result of protests or by reason of the Commission's own knowledge of the situation, there seems to be a probability that the suggested change will not be in the public interest.

The authority of the Commission as the final arbiter in the matter of rate changes and rate levels serves as the critical, distinguishing factor as between private industry and industries that are subject to public regulation.

No permanent harm can come to the public from any action taken by a rate bureau or a rate conference, since the authority of the Commission prevents the establishment of any unreasonable or discriminatory rate.

If rate bureaus and rate conferences are abolished, so that, to use Mr. Eastman's expression, each railroad acts independently and in a vacuum in the matter of proposing rates, practically every rate suggested by a railroad would have to be suspended by the Commission, in order that no injustice might be done either to shippers or to carriers.

The view clearly expressed by the Interstate Commerce Commission that rate conferences and rate bureaus are obviously useful and indeed essential to the orderly conduct of the transportation business has in the past been recognized as well by the Department of Justice. In the thirteenth annual report of the Interstate Commerce Commission, for the year 1899, long after the decision of the Supreme Court in the Trans-Missouri and Joint Traffic Association cases, there is an exchange of letters between the then Chairman of the Interstate Commerce Commission and the Honorable John W. Griggs, who was then the

Attorney General of the United States. The Commission called to the attention of the Department of Justice a proposed change in the Official Classification, which change had been adopted by the railroads in the Eastern District, acting in concert. The Commission submitted to the Department of Justice the question of whether such concerted action was a violation of the anti-trust laws. The Attorney General, in an official opinion, after stating that any grievance growing out of unreasonable or discriminatory rates could be remedied by Commission action and discussing the method whereby the new Official Classification was adopted, used this language:

"There is consultation by representative railroad men in committee respecting suggested changes in classification. There is subsequent independent action by railroad companies in the adoption of the new classification recommended by the committee. The testimony taken does not show that any railroad company acted under compulsion of a combination in adopting the official classification. It must be conceded that a common classification by railroad companies operating in the same territory is a desirable thing. Will it be insisted that railroad companies can not consult respecting freight classication? Or that, because one railroad company adopts a certain classification, another can not? The anti-trust law says there must be a contract or combination or conspiracy. This must be shown. And it must be shown to restrain individual action. This is not shown in the testimony submitted. . . .

"The Trans-Missouri and Joint Traffic Association cases afford no precedent for the action requested in this case. Each of those associations was formed by a contract, under which the companies selected a control authority to fix and maintain rates. There was an absolute suppression of competition. The power of independent action was destroyed. No company could change a rate fixed by the managers of the association, without subjecting itself to a penalty."

Supreme Court Findings

This brings us to a brief consideration of the decisions of the Supreme Court upon this question. Only two cases can be found in the long record of anti-trust decisions by the Supreme Court of the United States that have any direct bearing upon this question. These are the Trans-Missouri case and the Joint Traffic Association case, decided one in 1897 and the other in 1898. Those cases, as the excerpt from the opinion of Attorney General Griggs shows, dealt with an organization which had power to fix rates and which denied "independent action" to a carrier, except at the expense of grievous penalties. Subsequent to these decisions, all of the rate bureaus and rate conferences were reorganized so as to grant the power of "independent action" and without sanctions or penalties of any kind.

Furthermore, *these two cases were decided at a time when the Interstate Commerce Commission had no power to fix even maximum rates, much less minimum rates, and when the Commission had no power to suspend rates.* If the briefs filed by the Department of Justice in these ancient cases are examined, it will be found that there is frequent reference therein to the fact that the Commission did not possess power to fix rates and the argument was made that the public must depend upon competition to be sure of securing reasonable rates. These briefs pointed out that the existing Interstate Commerce Act provided for reasonable rates, but contained no machinery whereby the Commission could determine what rates were reasonable or enforce its findings in that respect.

I. C. C. Power Extended

Subsequent to these decisions, however, the power of the Interstate Commerce Commission has been so enlarged as to give it authority to fix maximum and minimum rates and to suspend rates which require investigation. Thus in 1906, by the Hepburn Act of that year, the Commission was given power to fix maximum rates. In the Mann-Elkins Act of 1910, the Commission was given the power to suspend rates. In the Transportation Act of 1920, the Commission was endowed with the power to prescribe minimum rates. In the Motor Carrier Act of 1935 and in the Transportation Act of 1940, the Commission was given authority, in the one case over motor carrier rates and in the other over the rates of water carriers. The situation, therefore, is very different from that which prevailed in 1897 and 1898, when the Commission was only a voice crying in the wilderness, without power to compel obedience to its findings in the matter of rates, practices and charges.

Literally hundreds of cases arising under the Sherman and Clayton anti-trust acts have been passed upon by the courts since the decisions in these two old cases, none of which, however, directly involves the question we are here endeavoring to discuss. However, there have been some significant statements by the court which challenge attention. I may mention, for example, the case of *McLean Trucking Co. v. United States*, decided in 1944 and reported in 321 U. S. 67. That case involved the right of the Commission to permit the consolidation of a number of motor carriers operating along the Atlantic Seaboard. The Department of Justice in that case contended that the combination represented a violation of the anti-trust act. After reviewing the numerous decisions of the court having to do with changes in the transportation policy and after devoting at length the significant declaration of public policy contained in the 1940 Transportation Act, Mr. Justice Rutledge, the organ of the court, uses this language:

"The history of the development of the special national transportation policy suggests, quite apart from the explicit provisions of § 5 (11) that the policies of the anti-trust laws determine 'the public interest' in railroad regulation only in a qualified way. And the altered emphasis in railroad legislation on achieving an adequate, efficient, and economical system of transportation through close supervision of business operations and practices rather than through heavy reliance on the enforcement of free competition in various phases of the business (citing authorities) has its counterpart in motor carrier policy. The premises of motor carrier regulation posit some curtailment of free and unrestrained competition. The origins and legislative history of the Motor Carrier Act adequately disclose that in it Congress recognized there may be occasions when 'competition between carriers may result in harm to the public as well as in benefit; and that when a [carrier] inflicts injury upon its rival, it may be the public which ultimately bears the loss.'"

Thus we see that the Interstate Commerce Commission, the Department of Justice and the courts themselves have from time to time recognized the distinction between public, fully regulated forms of business and lines of endeavor which are essentially private and not subject to public control in the matter of rates and services.

Using language which is severely restrained, it is a very remarkable fact that the agitation against the action of rate conferences and rate bureaus should be emphasized in the midst of this war. As everybody now knows and concedes, the transportation agencies have been doing a remarkable job in support of the war effort. Every responsible organ of public opinion has testified to the efficiency of the transportation service being rendered by these carriers. The remarkable achievement of the carriers has been made possible only by cooperative effort, in which shippers, government agencies, railroads, trucks and airplanes have worked together for a common purpose and to a common end.

Small Business Man's Act

Congress, from time to time, has recognized the necessity for such cooperative effort, not only among carriers but in private business as well. Recognizing the fact that the effort to enforce the anti-trust act may be harmful to the war effort, Congress adopted in 1942 Section 12 of the so-called Small Businessmen's Act, which provided that whenever the chairman of the War Production Board shall certify to the Attorney General that the doing of any act or thing is in the public interest and requisite to the prosecution of the war, no prosecution or civil action shall be commenced with reference thereto under the anti-trust laws of the United States.

Acting under the authority conferred by this Act, the Chairman of the War Production Board, on March 20, 1943, promulgated his certificate No. 44, in which occurs this language:

"I hereby approve joint action by common carriers or freight forwarders, or their respective representatives, through rate bureaus, rate conferences, or other similar carrier or forwarder organizations, in the initiation and establishment of common carrier and freight forwarder rates, fares, and charges, and carrier and forwarder regulations and practices pertaining thereto."

As a part of this certificate, it was provided that action by common carriers must be taken in conformity with regulations for rate conferences formulated by the Interstate Commerce Commission and made a part of the certificate. These regulations, thus formulated by the Commission and approved by the Chairman of the War Production Board, define rate conferences and authorize their establishment under certain rules and regulations, all of which have been carefully observed.

It would seem to be obvious, therefore, that Congress and the War Production Board have legalized the action of rate bureaus and conferences for the duration of the war. It is difficult to understand how the Department of Justice, in utter disregard of the law of the land and the conclusion of a high administrative officer vested with authority, can enter upon a crusade, when the war is in the most critical stages,

against this declared policy, solemnly adjudged to be in the public interest and necessary for the successful prosecution of the war.

You must draw your own conclusions as to whether attacks upon the railroads for doing that which the War Production Board has authorized can be classified as either intelligent or patriotic. I measure my words when I say that it is a tragic thing for men to be charged with violations of law by reason of their doing what the highest authority in the government has approved as being essential to the war effort and in the public interest.

The Association of American Railroads has ordinarily nothing to do with the making of rates. It does not exist as a rate-making body. The railroads, in their regional organizations, have established rate bureaus and conferences for the purpose of considering and consulting among themselves with respect to suitable rates essential to move the traffic of the country. But in this time of war, when it is necessary for the War and Navy Departments to secure rate adjustments upon short notice, the Association has been functioning as a part of an over-all rate authority, with power to make changes in rates applicable to military traffic, when the ends of justice require prompt action. Something more than three hundred rate changes have been made through the instrumentality of the Association, all of them at the request of the military and naval authorities. The Chief of the Transportation Corps of the Army, General Gross, in an address some time ago, said:

"Moreover, this war found the railroads of this country splendidly organized under a voluntary central agency known as the Association of American Railroads, and it has responded magnificently to every call."

An Invitation to Chaos

The officers of the Association are in daily contact with the Transportation Divisions of the Army and Navy, not only with respect to rates, but with respect to extraordinary movements of special trains necessary to move troops to and from points of embarkation and to give special movement to military traffic of the most critical nature. Just at this time, there is a large movement of wounded soldiers returning from the theatres of war in Europe and in the Pacific, who must be transported to hospitals for essential treatment.

And yet the Department of Justice seeks the dissolution of the Association of American Railroads, at a time when, without some central organization, we would have a repetition of what happened in the First World War, when, as the result of congestions, conflicting orders and confusion, the war effort was enormously retarded.

The attack upon the railroads, as expressed in public speeches made by agents of the Anti-Trust Division of the Department of Justice, is in reality an attack upon the Interstate Commerce Commission, upon the War Production Board and upon the Army and Navy of the United States. We are justified in making this statement since the Commission, in all of its public utterances has sanctioned and approved the organization and operation of traffic bureaus and rate conferences having for their purpose the orderly consideration of proposed changes in rates. The action of the Department is an attack upon the War Production Board and its action in promulgating Certificate 44, to which I have referred. It is as well an attack upon the policies of the Army and Navy, both of which agencies urged the War Production Board to adopt the policy expressed in this certificate, as the correspondence made public in the hearing on S. 942 before the Senate Committee amply shows.

Efficient Transport Imperiled

On the one side of this controversy will be found the armed forces of the United States and the civil agencies organized to furnish these armies with the necessary material to maintain the war, the Interstate Commerce Commission, the War Production Board, the great body of the shippers of the country and the transportation agencies themselves. On the other side is the Anti-Trust Division of the Department of Justice, which has made this quixotic attack upon an established policy necessary for the winning of the war and the orderly conduct of business in time of peace.

If it be found by the courts that there has been some technical violation of the anti-trust laws, as those laws have been interpreted, certainly Congress should come to the rescue of the harassed carriers with legislation which would provide, in substance, that the railroads shall conduct their rate bureaus and rate conferences in conformity with rules prescribed by the Interstate Commerce Commission and that, if these rules are complied with, action taken in accordance therewith shall not be subject to attack under the anti-trust laws.

The railroads are law abiding citizens. They are staffed by men scrupulously desirous of obeying the letter and the spirit of the law. They are under injunction to obey the orders of the Interstate Commerce Commission, so that rates shall be reasonable and nondiscriminatory. They cannot operate as individual, independent units. If they were to undertake to do so, the national policy declared by Congress would be defeated and all the progress of a century in the matter of rate regulation would be brought to a standstill.

They ask only for the privilege of conferring among themselves as to the reasonableness and desirability of rate changes and rate relationships. They cannot serve two masters, one the Interstate Commerce Commission and the other the Department of Justice.

Obviously, we cannot retain our place as the leading nation of the world unless we have a sound, smoothly functioning and efficient transportation system. This system is not a local and parochial matter; it must be national in its scope and governed by broad considerations of the public welfare.

If legislation is essential to enable our transportation systems to function efficiently, that legislation should be forthcoming.

* * *

Courtesy, M. R. S., Sixth Army Group, France.

Carl Gray Now in France

Director General of the 1st Military Railway Service, Brig. Gen. Carl R. Gray, Jr., (right) in charge of railroad service over lines from Marseilles up the Rhone Valley, maps out railroad operations in southern France with Col. H. Coudraux, commanding officer of the French Military Railway Commission—Cooperation such as this between French and American railroaders has been invaluable in the successful operation of supply lines from ports to forward areas.

Steam-Turbine Locomotive

(*Continued from page 340*)

gear center for roller bearings which are carried in the main gear case. There are two rows of cup assemblies, with eight in each row. Since the quill cannot extend to the driving wheels, as in the case of the electric locomotives, a drive spider is pressed on the locomotive axle, at its center, and the gear torque is transmitted by the cup assemblies to the arms of this spider.

Two major departures were made from conventional cup-drive design to enable the Class S-2 drives to withstand the heavy duty imposed on them by having to transmit power to all four axles.

The cups are made in two pieces, with self-aligning inserts which distribute the spring loads over relatively large areas of contact with the drive spider arms. The whole drive is enclosed by oil-tight cover plates so that the entire mechanism is kept clean and well-lubricated with a bath of heavy extreme-pressure lubricant.

The cup drives, in addition to permitting the up and down motion of the driving axles, are torsionally flexible. This protects the gearing and turbines from shock loads. It would also mean that, if the driving wheels on one of the two geared axles were larger than those on the other, that axle would tend to "hog" the load. To prevent this, and to force an equal division of power flow to each of the geared axles, side rods have been provided between No. 2 and No. 3 driving axles. All side rods on this locomotive are fully balanced, so that the dynamic augment inherent in reciprocating locomotives, is eliminated.

Lubrication

All turbine and gear bearings and the gear teeth are lubricated with the same oil, a high-grade turbine oil having a viscosity of 500 sec. Saybolt Universal at 100 deg. F. The system contains approximately 150 gallons, and the entire quantity is recirculated by one of two small turbine-driven Gould centrifugal pumps. One pump is for normal duty and the second one is an emergency standby. Oil is pumped from the gear case through a magnetic strainer and oil filter to a surface-type oil cooler, cooled by boiler feedwater, and then to a distributing manifold equipped with a steam-heating coil before being piped to the bearings and gear sprays.

A Look Back and Ahead

A regulator maintains a constant oil pressure of 15 lb. per sq. in. on the bearings and sprays. The pump discharge pressure is 60 lb. per sq. in., high-pressure oil being required for the hydraulic cylinder which is used to engage the reverse clutch.

The basic engineering ideas in the S-2 locomotives are the result of many years of study and development. Turbines have been applied abroad to steam locomotives. Some turbine locomotives have been successful and a few are still in service in Europe. Probably the most successful one is the 2,000-hp. non-condensing engine of the London, Midland & Scottish, placed in service in 1933. Since that time it has operated in express service between London and Glasgow over the same route as such famous trains as the Coronation Scot. The performance of this locomotive has been creditable. However, its power is insufficient to make it economically competitive with the efficient compound reciprocating locomotives used on the L. M. S. Locomotives, for railroads in the United States require two or three times the power of those used in England, and American railroads use the less efficient but simpler and more reliable single-expansion engine. These factors make the turbine locomotive more attractive here than in England.

The Pennsylvania Class S-2 locomotive has been undergoing tests on the railroad in both passenger and freight service. Continued operation in revenue service is contemplated fully to prove the mechanical adequacy of the design.

Dimensions, Weights and Proportions of the Pennsylvania 6-8-6 Direct-Drive Steam Turbine Locomotive

Railroad	Pennsylvania
Builder	Pennsylvania-Westinghouse-Baldwin
Type of locomotive	6-8-6 geared turbine
Road class	S-2
Date built	1944
Service	Passenger and freight
Tractive force; lb.:	
Forward	70,500
Reverse	65,000
Weight on drivers—tractive force:	
Forward	3.69
Backward	4.00
Wheels, Driving, diameter outside tires, in.	68
Weights in working order, lb.:	
On drivers	260,000
On front truck	143,000
On trailing truck	177,000
Total engine	580,000
Tender	449,400
Wheel bases, ft.-in.:	
Driving	19 - 6
Rigid	13 - 6
Engine, total	53 - 0
Engine and tender, total	108 - 0
Turbine characteristics:	
Steam conditions:	
Pressure at turbine inlet, lb. per. sq. in. gauge	285
Steam temperature at inlet, deg. F.	750
Back pressure at turbine exhaust lb. per sq. in. gauge	15
Ahead turbine:	
Nominal rated capacity, hp.	6,900
Maximum turbine operating speed, r.p.m.	9,000
Overspeed governor controlling speed, r.p.m.	10,000
Reverse turbine:	
Nominal rated capacity, hp.	1,500
Maximum turbine operating speed, r.p.m.	8,300
Overspeed governor controlling speed, r.p.m.	9,100
Main reduction gear:	
High-speed ratio	31 : 160
Low-speed ratio	31 : 111
Total reduction	18.5 : 1
Boiler:	
Type	Modified Belpaire
Steam pressure, lb. per sq. in.	310
Diameter, largest outside, in.	102
Firebox length, in.	180
Firebox width, in.	96
Combustion chamber length, in.	120
Tubes, number and diameter, in.	49 - 2¼
Flues, number and diameter, in.	235 - 3½
Length over tube sheets, ft.-in.	18 - 0
Net gas area through tubes and flues, sq. ft.	11
Fuel	Bituminous
Grate area, sq. ft.	120
Heating surfaces, sq. ft.:	
Firebox and comb. chamber	530
Circulators (6)	84
Tubes and flues	4,378
Evaporative, total	4,992
Superheater	2,050
Combined evaporative and superheater	7,042
Tender:	
Water capacity, gals.	18,000
Fuel capacity, tons	37½

COMMUNICATIONS . . .

Making Railroad History Accurate

OGDEN, UTAH

TO THE EDITOR:

Referring to D. K. Van Jugen's communication in your January 20 issue (page 193) in which he made suggestions for the correction of errors in our history text books:

The scholarly and accurate historian is quite likely to use contemporary newspaper articles as source material and the railroad officer who is adverse to giving interviews to newspaper reporters may find 30 or 40 years hence that some historian has made use of newspaper material which could have been more accurate through the cooperation of the contemporaneous railroad management.

Inaccuracies in present textbooks are quite likely to be repeated in future books, unless vigorous objections are made to the incorrect statements. Your textbook historian seldom conducts tedious research to secure data for his book. He usually uses secondary sources and if the information in such sources has gone unchallenged he is quite likely to repeat it.

The historian hired by a railroad, however, at times goes astray also. A certain railroad within the past year did some advertising in commemorating an historic event in the carrier's early career, and the writer of the publicity material left off the second word in the name of the locality to be publicized, thereby erroneously locating the historical event at a place some distance from where it actually occurred. This may be a trivial error, but it is well for those who would inculcate accuracy also to practice it.

The textbook historian may consider his errors to which railroads may object as trivial as this one made by a railroad.

The railroad to secure the wholehearted cooperation of the historian must be willing to give access to all records not currently being used and should be friendly and cooperative to the newspaper reporter and all other writers desiring either oral or written information.

HUGH F. O'NEIL.

Keeping Tabs On Depreciation

CHICAGO

TO THE EDITOR:

It is encouraging to note that interest in the statistical problem which is a by-product of the general problem of depreciation, is not dead. I refer to H. J. Dow's article in the January 27 issue of the *Railway Age*. Mr. Dow is to be congratulated on his simple and concise statement

of procedure under a method which is called the turnover method.

For the benefit of those who may wish to investigate this method more fully the following references are given:

Robley Winfrey, "Statistical Analyses of Industrial Property Retirements," Iowa State College Bulletin No. 125 (1935) pages 51 and 55.
N. A. R. U. C. Committee on Depreciation, 1943 Report, pages 250-277.
Staff of Public Service Commission of Wisconsin, "Depreciation, A Review of Legal and Accounting Problems" (1933) pages 166-177.

Whether one defines depreciation as "actual" (current A. S. C. E. Report) or as cost proration on the books, it must be admitted that the report of the National Association of Railway and Utilities Commissioners is sound in its description of the technique of the various methods covered by the report. All authorities seem to agree:

(1) The turnover method must be adjusted for growth or decline in the property or it will not give correct average lives.

(2) This method ignores the mortality dispersion of the data which can be analyzed only by development or adoption of a proper life table or survivor curve. Hence, although the method may be suitable for determination of average lives in certain special cases, it is not suitable for determination of accrued depreciation used in the sense of cost proration.

(3) The assumption of first in, first out, or retirement of oldest units first, is unwarranted in fact and leads to distorted service life, whether of physical units or dollars on the books.

The turnover method has its place, but it is not the cure-all for analysis of depreciation data that some may be led to believe from Mr. Dow's presentation.

One fact is forcefully presented in this article; namely that service life on the group basis is continually changing except in rare cases where the property is stabilized. A system of composite-age-rates developed from the life table of survivors and applied to the in-service depreciation bases will give:

(1) For a stabilized property a constant depreciation, depreciation rate, and service life, equal to the results obtained by what is usually (though I believe erroneously) called the "straight line method."

(2) For a growing or declining property correct cost proration over the actual (composite) life of the group on the straight line basis. In this case, the charges, rates and composite lives will vary with the growth or decline, but will always fit the group in the current depreciation base.

(3) For any property correct accrued depreciation in the cost proration sense, based on the so-called age-life ratio (more properly called the composite-age-composite life ratio) according to the straight-line concept, and without absurdities which most other methods permit.

G. B. McMillen

Installs Five Double-Slip Switches in Heavy-Traffic Line Without Train Delays

Recently, the New York Central placed five No. 10 double-slip switches in its main tracks at Harmon, N. Y., replacing No. 8 slip switches, without delaying any through freight or passenger trains. The work was done on five successive Sundays, when commuter service would not interfere. The slips were pre-assembled alongside the tracks, including the electric switch machines, and were tested. To enable the completely assembled slip switches to be set into the track as a unit, they were bolted to two 15-in. I beams, blocked together, which prevented them from bending. Two steam cranes were used to set them in place. The new slips are made of 127-lb. rail and weigh approximately 35 tons each. The illustration shows the third double-slip switch being lowered into place. These switches at Harmon are used primarily for changing from steam to electric motive power or vice versa.

Railroads-in-War News

Shows Results of Fast Amortization

I. C. C. finds 5-year plan adds $326 million to equipment charge-off since 1941

Up to December 31, 1944, Class I line haul roads had charged to operating expenses, since amortization of the cost of emergency facilities on a 5-year basis became permissible (September 22, 1941), about $429.5 million representing such amortization. Data contributing to this summary figure are presented by the Bureau of Transport Economics and Statistics of the Interstate Commerce Commission in the latest issue of its "Monthly Comment on Transportation Statistics."

Operating Expenses Increased—The 20 per cent rate at which amortization of such facilities is charged increases operating expenses as compared to what they would be if the commission's prescribed depreciation rates were applicable, of course, the bureau points out, but it finds it "impracticable" to estimate this difference so far as road property facilities are involved, because track does not come under the regular depreciation accounting regulation. The composite depreciation rate for equipment for the years 1941-1943 averaged about 3.41 per cent. If the same rate prevailed in 1944, the bureau observes, equipment depreciation charges would have amounted to about $67 million, or about $326 million less than the actual charge to operating expenses in the 1941-1944 period.

Charges to operating expenses representing amortization for defense projects amounted to about 17.3 per cent of the 1944 net railway operating income, the study notes, as against 10.7 per cent for 1943, 6.2 per cent for 1942, and 0.1 per cent for 1941. Extending the showing of this period to the future, the bureau estimates that amortization charges, under the 5-year plan, against carrier income will amount, unless otherwise disposed of, to some $191 million each for the years 1945 and 1946, and $100 million for 1947. Thereafter the amounts will decline sharply, except that they would all be affected to the extent that there are additional expenditures in 1945 or later years for facilities to which the 5-year plan would be applicable.

Rate of Return—The publication surveys briefly comparative figures on rates of return for the major territorial groupings, both as calculated on the basis of net property investment and on the I. C. C. valuation basis. For all class I roads the ratio of net railway operating income to net property investment, in 1944, was 4.91, as compared to 6.03 in 1943. Using the value of property basis, the ratio was 5.64 in 1944, as compared to 6.93 the preceding year.

The rate of return for 1944, calculated first on the property investment basis and then on the valuation basis, for the principal territories, was as follows: Eastern district, 4.24 and 4.69; Pocahontas region, 6.37 and 7.52; Southern region, 5.85 and 6.63; and Western district, 5.10 and 6.10. Comparisons with 1943 figures showed decreases, on a percentage basis, of 21 for the Eastern district, 5 for the Pocahontas region, 18 for the Southern region, and 19 for the Western district.

"Several striking changes in the financial results of the rail carriers have occurred from 1941 (substantially a pre-war year) through 1944," the bureau remarks. In the latter year, as compared to the former, freight revenue increased by more than 57 per cent, passenger revenue about 248 per cent, and total revenues about 77 per cent. In 1944 federal income taxes were about 7½ times as large as in 1941, but net railway operating income after taxes was only 10.8 per cent greater. Expenditures for maintenance of way and structures had increased 2.1 times, but maintenance of equipment was up only 1.6 times. "For the first time in many years," the operating ratio declined in 1941 below 70 per cent. The ratio fell "abruptly" in 1942, but in 1944 it had approached within 2 percentage points of the 1941 level. Net railway operating income, after an increase of nearly 50 per cent in 1942 over 1941, has fallen off "sharply."

How Net Income Fares—During 1944 the ratio of net income to net railway operating income for successive 12-month periods declined steadily from January's 63.9 to October's 58.8, but the trend was reversed in the final two months, winding up at 60.2 for December.

Continuing its experimental forecast of carload loadings, the bureau now predicts a total of 18,086,518 cars for the first 6 months of this year, a decrease of 2.8 per cent from last year's first 6 months, but an increase of 1.0 per cent above the estimate presented in the January "Monthly Comment." In explanation, the bureau says, "Actual January loadings are included in the forecast, which has been revised for later months pursuant to information received from shippers and others during January. The effect of embargoes on loadings of freight within, into, and via the northeastern part of the country during January and February will tend to make the current forecast high."

Traffic Levels Off—Examining late employment figures, the study points out that, as compared to the 5-year period

(*Continued on page 353*)

Tank Car Movement Slowed by Blizzards

Deliveries hit 3-year low, but congestion clears up—Pelley is hopeful

There was no definite indication when this issue went to press that it would be necessary within the next few days to apply another embargo on civilian freight to points within the northern and eastern states which were affected by recent embargoes, but such views were subject to change in case of renewed storms of the character that led to virtual blockades of freight movement in some localities in the past few weeks. New heavy snowstorms were reported this week in western New York and central Pennsylvania, but it was said that they had not caused serious interference with rail operations. While much of New England suffered unusual snowfall late last week, causing some delay in handling cars at several points, it did not prove to be necessary to impose a general embargo to meet this situation.

A repercussion of the traffic congestion in the Northeast, a box car shortage which threatened to disrupt freight traffic on western railroads was relieved last week when on February 10 solid trains of empty cars began moving through the Chicago and St. Louis gateways. C. E. Johnston, chairman of the Western Association of Railway Executives, expressed relief, pointing out that "movement of empty cars through the Chicago gateway to the West fell to as low as 25 per cent of normal. It is now up to 40 per cent and should continue to increase daily until normal movement is attained."

Coal Loadings Off—Although a general improvement of operating conditions within the worst affected area was reported, the effect of the embargoes was becoming increasingly evident in statistics of industrial activity in many parts of the country, such as carloading reports. Bituminous coal production for the week ended February 3, for example, was only 11,360,000 tons, as compared to 12,850,000 tons in the corresponding week last year. Congestion at rail terminals in the North and Northwest, according to Solid Fuels Administrator Ickes, prevented the unloading and return to the mines of many cars, so curtailing output. In western Pennsylvania and northern West Virginia mines reported about 5,200 cars short for that week, while the southern Appalachian area reported 1,447 cars short for the week. Nevertheless, mining districts 7 and 8, including southern West Virginia, eastern Kentucky and northeastern Tennessee, re-

ported the highest output of any week for the past year.

During the week ended February 3, petroleum deliveries by tank car to the East Coast area fell to the lowest point in the last three years, as a result of the crippling blizzards, Deputy Petroleum Administrator Davies reported. The daily average of tank car deliveries to that area was 439,722 barrels, compared to the previous low of 464,561 barrels daily during the week ended March 21, 1942.

Tank Cars Stalled—Mr. Davies estimated that between 15,000 and 20,000 petroleum tank cars were stranded by snowdrifts or tied up in yards and terminals during the week his figures covered. At the same time, barge traffic was "almost completely paralyzed along the Atlantic coast and on the upper reaches of the Ohio River," he said.

According to Mr. Davies, the oil situation on the East coast, as a result of transportation difficulties, is in one of the most critical periods of the war. Local spot shortages have developed at several points north of the Potomac river, he explained, and "spot shortages will continue because of the effects of the current transportation handicaps all along the East coast—from Bangor, Me., to below the Chesapeake because of ice conditions in the harbors, bays and rivers; and south of the Chesapeake because of seasonal fogs."

To "the almost superhuman accomplishments" of those concerned in the movement of oil and petroleum products he ascribed avoidance of even more serious conditions. "Everything humanly possible is being done to overcome the terrific obstacles that must be surmounted if we are to squeeze through the next several weeks without more local difficulties," he said.

Pittsburgh Area Hit—As February began, the severest difficulty in the movement of petroleum tank cars was experienced in western New York, northern Ohio, and western Pennsylvania, the deputy administrator observed. (Conditions in these areas were reported in *Railway Age* in the issues of February 3 and 10.) "Through oil trains were hampered by heavy snows and ice interfering with interlocking switching operations, while some trains were halted completely by . . . drifts. Along the Niagara frontier, 80 to 100 in. of snow backlogged some 4,200 oil tank cars from Buffalo as far west as Toledo and Detroit. About 1,000 tank cars were laid up on feeder lines from Toledo westward, waiting for the breakup of congested traffic east of Toledo and Pittsburgh. Cleveland was snowbound for several days so that through trains could not move into the yards in that city.

"Pittsburgh, along with Buffalo a principal gateway to the East coast, was particularly hard hit by snow storms," Mr. Davies continued, and he quoted "one petroleum tank car expert" as calling this "the worst winter seen in the memory of the oldest man in this business."

Barges in Trouble—Barges were moving with great difficulty or not at all, this report went on to say. "Oil deliveries to Baltimore and Washington from Philadelphia and other points were halted when barges and, in some instances, even tankers were held up by a field of 20 miles of ice in the Chesapeake Bay." Delaware Bay and the lower Hudson River also were affected. Meanwhile, there were 25 tow boats in New York repair yards while others were waiting to get into the ways.

Pipeline deliveries to the Atlantic seaboard were not much affected by the bad weather, and in the week ended February 3 the "Big Inch" handled an average of 311,060 barrels a day, with the 20-inch line handling 228,111 barrels a day.

One result of the depletion of stocks of heavy oils resulting from transportation difficulties and military requirements was an Office of Defense Transportation request on February 12, calling on operators of tank trucks to put their over-the-road trucks on a 130-hr. week basis, leasing trucks to other operators in cases where they cannot be fully utilized for such time in their regular services. "Failure of a number of owners of tank truck equipment to lease such equipment on a part time basis so as to bring its utilization to full capacity has forced the granting of a considerable number of O. D. T. permits for the use of rail tank cars on short hauls, thus depriving the armed services and the public from the use of these cars in long-haul overland transportation," the O. D. T. statement explained.

Pelley's Report—The general situation resulting from the embargoes was reviewed by John J. Pelley, president of the Association of American Railroads, in a statement on the "March of Time" radio program broadcast over the Blue Network on February 8. He said:

"Early in the war, there were gloomy predictions that the American railroads would not be able to meet the strain of war. But in this war, one tough situation after another has been met, and, on the whole, well met. Total freight movement has more than doubled, and passenger travel has gone up more than four times. We accomplished this vast increase with approximately the same amount of equipment we started the war with, and like a lot of other businesses, we lost workers to the armed services.

"Last year was the biggest year in the history of American railroads. There was every reason to believe that 1944 was the peak; that if we did the job then, we could do as much in 1945. It remained for the weather of the last two months to create a situation where the traffic could not be carried currently. That is why we had to stop for a brief time the loading of all but vital freight for movement into or through the snowbound area. I am happy to be able to report tonight that the embargoes recently issued have been helpful toward clearing up the situation. More and more cars are being moved each day in and from the blizzard belt. It is too early to say whether this will keep up—so much depends on the weather.

"I think I can say the American railroads have done an unprecedented job in this war. We are doing it, and we will continue to do it. One hundred inches of snow, as we have had, might slow down even the Red Army. We've overcome equipment shortages and many other difficult obstacles. We're doing our utmost to lick even the snow. American railroads are proud to be America's first line of offense."

"Ruined" Port of LeHavre Now Exceeds Pre-War Tonnage

Recently returned from an inspection tour of the European and Mediterranean theaters of operation, Maj. Gen. C. P. Gross, the Army's chief of transportation, has reported that the French port of LeHavre, thought by the Germans to be "100 per cent destroyed," before their capitulation to the Canadian First Army, on September 12, at present is handling more tonnage than before the war, all of it moving promptly to the front.

It now develops that only a few days following the port's capture, food, ammunition and other supplies were being brought in by L.S.T.'s and similar landing craft. And with the rehabilitation of the great Rochemont lock, some time later, the inner basin of the port was made usable and the port capacity increased to more than 15,000 tons a day. Liberty ships, said the general, have had access to the port since the middle of December.

Bombed from the air, and shelled from land and sea, LeHavre, after a six weeks' siege, had been destroyed 70 per cent in the city proper and totally ruined in the port area, when the Transportation Corps units moved in. Aided by the Engineers and French civilians, they succeeded in clearing the beaches to provide smooth landing sections for naval landing craft and for the Army's "Ducks," the amphibian trucks which carried supplies direct to inland dumps.

To relieve promptly the over-burdened supply lines from Cherbourg to the front, the "Whiteball highway" was established between LeHavre and Beauvais, with trucks hauling supplies to the latter point for transfer to railway lines running to Compiegne, Tergnier, and Liege.

General Gross recalled that the opening of the port "almost" was delayed for three months, when a Liberty ship, carrying 6,000 tons of ammunition, struck a mine at the breakwater entrance. Fortunately, the cargo did not explode, and the vessel drifted 200 yards from the entrance and beached. He disclosed that nearly all cargo now has been salvaged.

Hazards for Boys in Railroad Work Are Assayed

In an effort to channel boys of 16 and 17 who seek employment on the railroads into jobs where they are least likely to suffer injury themselves or cause injury to others, the Children's Bureau of the Department of Labor, working with the Association of American Railroads, the railway brotherhoods, and government agencies concerned with transportation, has drawn up "advisory standards" for the employment of young workers in the industry.

The bureau's recommendations are set forth in leaflet No. 11 of a series, "Which Jobs for Young Workers?" In general, it suggests that jobs that boys can perform with a fair degree of safety are those in the clerical category and those involved in maintenance of way, maintenance of equipment, stores, work in baggage and parcel rooms and in stations and warehouses.

Jobs considered too hazardous are those involved in operation of trains, work on bridges and scaffolds, and work as section hands in yards or where traffic is especially heavy.

In addition to its recommendations regarding suitability of jobs, the bureau's leaflet contains a digest of state laws affecting employment of minors on railroads. It points out that, in a number of states, the minimum age is two years higher than for general employment.

Set Up Asphalt Committee

Government agencies concerned in the movement and use of asphalt have set up a temporary special "asphalt transportation committee," which will study and coordinate consumer requirements, productive facilities, and available transportation, so that the movement of asphalt in 1945 can be reduced as much as possible, and long hauls and cross hauls can be largely avoided.

This committee will act in an advisory capacity to the Office of Defense Transportation, according to O. D. T. Director Johnson, and that office will be represented on it. Other agencies concerned, are the Petroleum Administrator, War Production Board, Public Roads Administration, U. S. Army Engineers, and Civil Aeronautics Administration.

This action is being taken, according to Colonel Johnson, to avoid difficulties such as those experienced in handling asphalt in 1944. Many suppliers contracted for the sale of asphalt and tar last year, he said, only to find, when it was time to make deliveries, that there were not sufficient tank cars available, due to the volume of "more essential commodities" that had to be moved.

I. C. C. Service Orders

In connection with a further extension of the War Food Administration's permit system as applied to the movement of Irish potatoes, a measure ordered to facilitate the procurement of potatoes for government agencies, the Interstate Commerce Commission has issued Third Revised Service Order No. 259, superseding previous orders under that number, and effective February 9 through April 30, unless otherwise ordered. This service order adds the Red River Valley of Minnesota and North Dakota to the areas to which the prohibition against movement of cars loaded with Irish potatoes, except on W. F. A. permit, is applicable. This prohibition also applies to Aroostook county, Maine; to the state of Colorado; and to certain counties in Idaho, Oregon and California.

Because "refrigerator cars loaded with fresh fruits and vegetables are arriving at destinations in certain areas . . . with excessive amounts of bunker and top ice therein, and . . . the loss of time necessary to remove the excess ice and recondition the cars before they can be used again" is causing undue delay in the movement of such cars, the commission has issued Service Order No. 282, effective February 14 through March 20, unless otherwise ordered. This order prohibits use of more than 5,000 lb. of ice to retop ice such cars consigned or reconsigned to any point in Canada, Montana, North Dakota, South Dakota, or Minnesota, or east of the Mississippi river and north of the northern boundaries of Tennessee and North Carolina. It further prohibits any retop icing of such cars at United States points within the territory thus defined, and limits the amount of ice used to re-ice bunkers in such cars at any United States point within the defined area to 50 per cent of bunker capacity.

Through Amendment No. 2 to Revised Service Order No. 263, the provisions of that order imposing strict demurrage requirements on tank cars have been extended to cover tank cars of mechanical designations TP or TPI except when such cars are loaded with certain specified chemicals. This amendment, superseding corrected Amendment No. 1, is effective February 22.

Effective February 15, certain changes were made in the routes to which restrictions on routing of non-transit grain were applied by Service Order No. 222 and its supplements. These changes were embraced in Amendment No. 2 to supplement 5 to the original order.

Enlisted Railroaders Receive Gold Bars in Iran

Seven former railroaders were among 12 enlisted men in the Third Military Railway Service recently given direct commissions in the Transportation Corps at Teheran, Iran, it has been announced by the Persian Gulf Command Headquarters.

Two of the former railroaders received the gold bars, making them second lieutenants, at a special ceremony in the office of Brig. Gen. Donald P. Booth, P. G. C., commanding general, while the other five were commissioned at nearby Camp Atterbury. All had played important roles in the movement of war materials to Russia.

General Booth, together with Col. Robert E. Mattson, superintendent of transportation for the 3rd M. R. S., and former battalion commander of the 711th, pinned the second lieutenant's bars on two staff sergeants of the 711th—Parvey E. Harrison, of Dearing, Ga., once a brakeman for the Georgia R. R., and Gilbert E. Shelpman, North Lewisburg, Ohio, formerly in maintenance-of-way work.

Former railroaders commissioned at Camp Atterbury included: T/Sgt. Thomas A. Mangan (of the 730th Ry. Op. Bn.), who had been a sheet metal worker for the Frisco; Staff Sgt. Robert Springer (730th Ry. Op. Bn.), formerly a locomotive engineer for the Erie; Staff Sgt. Frank C. Ficke (754th Ry. Op. Bn.), once a machinist on the Santa Fe; Master Sgt. Melville R. Deckinger (730th Ry. Op. Bn.), a towerman and telegraph operator for the Erie and the New York Central; Master Sgt. John T. Dunbar (730th Ry. Op. Bn.), a telegraph operator for the Texas & Pacific.

Photo P.G.C., U. S. Army

General Booth (left) and Colonel Mattson Pinning the Gold Bars on Former Railway Brakeman, Parvey E. Harrison, at Camp Amirabad, in Teheran

Shows Results of Fast Amortization

(Continued from page 351)

1935-1939, the number of employees of Class I roads in 1944 had increased 39 per cent, while ton-miles increased 130 per cent and passenger-miles increased 345 per cent.

In its regular survey of operating results, the bureau noted that last December's freight revenues were 5.1 per cent below November and 2.7 per cent below December, 1943. Making allowance for the occurrence of 5 Sundays in December, 1944, however, an increase of 0.5 per cent over the comparable 1943 month would be indicated. The freight revenue index (based on the 1935-1939 monthly average as 100) for December was 213.9, the lowest index since January, 1944. The passenger index, similarly calculated, was 418.0 for last December, or about the same as in October. It has been above 400 since May, 1943. Though actual passenger revenue in December, 1944, exceeded November by 4.4 per cent, the increase was only 1 per cent if allowance is made for the difference in length of the two months. Compared to December, 1943, passenger revenue declined 3.4 per cent in December, 1944.

Some Conventions Get O. K.

Between February 1 and 9 the War Committee on Conventions denied 469 applications for approval of scheduled conventions or meetings and gave approval to 15, according to the Office of Defense Transportation.

The committee's "yardstick" of essentiality is "how the winning of the two wars we are now fighting will be impeded if the meeting in question were held to an attendance of 50 or canceled outright." The list of approved meetings included the legislative conferences of the Central Pennsylvania Conference of the Evangelical Church; the General Assembly of the United Presbyterian Church; the United Lutheran Synod; and the Washington-Virginia Annual Conference of the Colored Methodist Episcopal Church. It also included the national wage conference, at Washington, D. C., of the United Mine Workers and Southern Coal Producers Association. Another approved gathering was the Wartime Graduate Medical Meeting, Regional Board No. 19, sponsored by three national medical societies.

In line with the governmental ban on conventions, the American Society for Testing Materials has canceled its Committee Week, which was to have been held at Pittsburgh, Pa., during the week of

February 26. The spring meeting of the society, scheduled for February 28, is being postponed as well.

The 25th annual meeting of the Copper and Brass Research Association, due to be held May 17, has been canceled, and election of officers, budget approval and similar business will be acted upon by mail.

Materials and Prices

The following is a digest of orders and notices that have been issued by the War Production Board and the Office of Price Administration since January 27, and which are of interest to railways:

Copper Wire and Cable—The W. P. B. has imposed limitations on the amount of lead that may be used as a protective sheath in the manufacture of insulated copper wire and cable, by Direction No. 63 to CMPR-1. No producer may use lead as a protective sheath for copper insulated wire or cable unless it is one of the following types :(1) fire alarm and traffic control, (2) telephone and telegraph, (3) railway signal, (4) shipboard cable or (5) wire and cable rated more than 2,000 volts.

Freon 12—Production of Freon 12 (Dichlorodifluoromethane) has been increased and stabilized sufficiently to permit a relaxation in restrictions on its use in refrigeration and air conditioning systems. An amendment to Order M-28, provides that Freon 12 may be used now for any refrigeration and air conditioning systems except those included in List A of the order.

Integral Electric Motors—Production of integral horsepower electric motors during the next six to nine months will be as critical as any period in the last two years. In the last six weeks several top urgency programs involving considerable quantities of electric equipment have been initiated or expanded, and the electrical equipment for these programs will be needed within the next three to nine months, W. P. B. officials explained.

Lead—Manufacturers and distributors of civilian buttons, badges, emblems, regalia, costume jewelry, novelties, trophies, games, toys, statuary and art goods, all classed as non-essential products, containing lead, are prohibited from further sales of such products after February 28, in the third amendment to Order M-38 issued during the last five weeks to conserve lead for war needs.

This amendment, effective February 1, however, increases the allowable use of lead in storage batteries for civilian use during the first quarter of 1945 from 50 per cent of the 1944 base period to 75 per cent, with subsequent allotments to be announced. Lead uses also were liberalized moderately in List B of the Order where the essentiality in the war effort had been established and substitutions of less critical materials cannot be effected. The latter included lead wool, abrasives and grinding wheels, industrial filters, zinc rolling cable covering, battery cables (under L-158), and insulator pins.

W. P. B. officials explained that the critical lead situation is attributable mostly to labor shortages. Smelting and refining capacity is adequate but the number of workers has been insufficient to raise production to meet requirements.

Office Equipment — "Spot authorizations" (under PR-25) for the production of metal lockers, shelving, visible record equipment and filing cabinets in the first quarter of 1945 represent a very small percentage of pre-war production, and the difficulty of obtaining materials will prevent production in the quantities authorized.

Pigments—W. P. B. announced that yellow iron oxide pigments have been placed under allocation control of schedule 90 of order M-300. Limitation order M-383 was revoked. The change is effective March 1.

Plywood—Distributors' inventories of softwood plywood have declined 60 per cent since January, 1944, and the decline during the last four months amounted to 20 per cent. Inventories now total only 32,000,000,000 sq. ft., about a 20-day supply. A 30-day inventory is considered a minimum for normal business operations.

PR-24 Restricted—To prevent interference with the use of man-power, facilities and materials for urgently needed war production, the W. P. B. has rendered inoperative the provisions of PR-24 that have permitted the placement of unrated or non-authorized orders for certain types of capital goods and other equipment. This action was taken by eliminating all W. P. B. orders appearing in List A of the regulation from coverage by the regulation. When the over-all manpower, facilities and materials supply picture has improved sufficiently, it is expected that certain products again will be covered by the regulation, W. P. B. said.

Items covered by the orders that have been deleted from the list for which unrated or non-authorized purchase orders already have been placed and which have not been actually shipped, may not be delivered unless proper rating or authorization is obtained or unless the particular W. P. B. order is amended to allow such delivery. Unrated or non-authorized purchase orders may be retained on purchasers' books, but must be treated as orders scheduled for delivery when applicable restrictions are modified to permit delivery. This rule, which affects so-called post-war orders generally, is contained in Interpretation No. 11 to PR-1.

Orders affected by this action, together with the types of equipment and machinery covered, follow: L-89, elevators and escalators; L-123, general industrial equipment; L-193, coveying machinery and mechanical power transmission equipment; L-221, electric motors and generators; L-226, printing trades machinery; L-250, electric motor controllers; L-298, resistance welding equipment; L-311, logging, lumber and wood products machinery and equipment.

Radiation—Six months will be needed to fill present unfilled orders for radiation alone and not considering future orders, according to the Cast Iron Boiler and Radiator Labor Advisory Committee. Production, which was 25 per cent below schedule in 1944, is continuing to decline, in the face of expected sharp increases in civilian and military requirements for 1945. Estimates indicate that approximately 3,250,000 sq. ft. of radiation will be needed for the veterans' hospitals program.

Minimum radiation requirements for 1945 are 25 per cent of pre-war output, W. P. B. said. Actual production last year was approximately 20 per cent of normal peace-time output.

Re-Rolled Steel Products—Orders for steel products that can be made on rerolling-mills will be shifted from "hot mills" whenever possible to relieve the latter's crowded schedules. Directives on leading primary steel producers for producing reinforcing bars have been cut approximately 50 per cent to allow for production of other urgently needed war requirements. It is planned to reschedule these orders where possible on the rerolling-mills to absorb any available open capacity.

The order shift will not be limited to reinforcing bars. Lack of rails is a primary obstacle in expanding rerolling operations. Members of the Rail Steel Mill Industry Advisory Committee reported that a better segregation of scrap would improve the situation, pointing out that many rails now being melted into scrap could be used by the rerolling mills. Steps have been initiated to channel suitable material to the rerollers.

Stainless Steel—Filling of orders for stainless steel subject to deferred allotments and the filling of orders to build up warehouse inventories of steel are prohibited temporarily, under Direction No. 62 to CMPR-1. Under the new rules, no manufacturer may produce or deliver any stainless steel on orders identified by a CMP allotment symbol the initial letter of which is Z (Z-1, ZIE, Z-2, etc.). These are the deferred allotment symbols assigned by W. P. B. in connection with allotments of steel for production of civilian type goods under the spot authorization procedure contained in PR-25.

Unit Heaters—Delivery of unit heaters for extended surface heating have been limited to orders with ratings of AA-2X or better until April 16. There is no inventory of unit heaters at present and the lack of copper and steel during the third and fourth quarters of 1944 and the first quarter of 1945 makes it impossible to meet the demand, it was explained.

Prices

Asphalt—While their petition for increased ceiling prices is pending, sellers of asphalt and asphalt products, including refiners, resellers, distributors, roofers and retailers, may sell at prices that may be established later by official action on the petition, according to Amendment No. 9 to MPR-323, effective February 12. Until a decision is reached on a petition no payments may be made in excess of the existing ceiling prices. Any increases granted may be collected later.

Bituminous Coal—Coal producers in the big southern Appalachian mining area may increase their ceiling prices of bituminous coal temporarily from 5 to 15 cents a ton to help pay for extra costs of Sunday operations in February, O. P. A. announced. Amendment No. 129 to MPR No. 120 and amendment No. 28 to RMPR No. GQWW became effective February 3. Another amendment to MPR No. 130 provides that mines paying double time for February 4, in accordance with executive order No. 9240 may increase their ceilings even though February 4, was not the seventh consecutive day of operation.

Building Materials—Individual adjustment provisions applying to manufacturers' maximum prices for two groups of building materials, (1) mechanical equipment, such as sheet metal work, furnaces, etc., and (2) mason materials, refractories, roofing and insulation material, have been incorporated in a single order and separated from similar provisions relating to manufacturers' prices for consumers' goods. Effective February 7, the new order provides producers with a uniform adjustment procedure, O. P. A. said, with all provisions contained in a single document. In addition, the new order (B-1 under MPR-188) includes other building materials for which no individual adjustment provisions were provided previously, including furnaces and repair parts, air conditioning units, and numerous smaller items.

Hardwood Lumber—O. P. A. has authorized general price increases at the mill level averaging $3 per M. f. b. m. on hardwood lumber. Increases are the minimum required by law and will permit a 75 per cent minimum of output to be produced without financial loss. Amendment 16 to revised MPR-17 was effective February 9.

Manganese Steel Castings—An increase of four per cent in the ceiling prices for all manganese steel castings became effective February 12. The increase was authorized, O. P. A. said, because the manganese steel castings industry at present is not earning an amount equal to its adjusted 1936-39 base period profits. Under this circumstance, the present maximum prices are no longer considered fair and equitable by O. P. A., and an increase sufficient to restore profits to those of the 1936-39 pre-war period is mandatory to satisfy the minimum requirements of law.

Plastic-Faced Plywood — Manufacturers of plastic-faced plywood containing one or more laminations of softwood veneer were authorized by the O. P. A. to apply to the Lumber Branch in the national O. P. A. for special prices for these plywoods.

Ready-Mixed Concrete—Ready-mixed concrete manufacturers in Wisconsin, Illinois, Indiana, western Kentucky, North and South Dakota, Minnesota, Iowa and eastern Missouri may increase present ceiling prices by the actual additional cost resulting to them from the recent increase granted to manufacturers of cement in that area, according to Amendment No. 69 to Order A-1 under MPR-188, effective February 3.

Southern Pine—Producers are authorized by Amendment No. 7 to Second RMPR-19, effective January 27, to price all Southern pine lumber except finish grades on the basis of the exact lengths shipped.

Western Red Cedar—Producers of western red cedar lumber may apply to O. P. A. for an adjustment of their selling prices if existing ceiling prices are causing them substantial hardship and impeding western red cedar production according to Amendment No. 2 to MPR-402, effective February 10.

GENERAL NEWS

Pullman-Standard Plans Improvements

Will spend several million dollars to prepare plants for speedy production

A several-million dollar modernization and construction program to prepare its plants for the speedy production of railway equipment, including newly-designed cars embodying revolutionary concepts of passenger accommodations, was announced by the Pullman-Standard Car Manufacturing Company on February 13. In revealing these plans, Wallace N. Barker, vice-president, declared that the company is not "standing at ease on the problem of providing continuing employment after the war even though it is now marching 'on the double' supplying weapons of victory." At the same time he pointed out that if the railroads are to preserve a strong competitive position they will need to replace obsolete and war-worn rolling stock as soon as possible.

Ready With "Mock-ups"—"Toward this end we have already prepared and shown to hundreds of railway officers our blueprints, models and 'mock-ups' of passenger cars radically different in hundreds of interior features from anything now on the rails," he said. "Naturally we want to be ready to supply this equipment rapidly as soon as conditions permit."

The program, Mr. Barker explained, embraces all six of the company's plants and includes new construction, installation of new equipment, renovations of buildings and machinery, alterations for improving working conditions and rearrangement of facilities for the most efficient operation. The Chicago and Worcester, Mass., plants will be revamped for the resumption of passenger car construction, with the latter also scheduled for additional changes and new machinery for the better manufacture of modern transit equipment.

H. W. Siddall, Chairman of the Transcontinental Passenger Association, Studies an Artist's Conception of a Future Railway Passenger Station

War Work Easing Off—The three units of the Chicago plant employed 12,000 at the peak of war work. Two of these units comprising the shipbuilding division are now nearing the end of work on patrol vessels and landing craft for the Navy. The third, or aircraft, division is continuing with full-scale production of wings and major sub-assemblies for giant cargo planes.

The Worcester plant, in addition to turning out such war material as parts for anti-aircraft guns and hospital trains, has continued manufacturing vitally needed domestic transit equipment. In 1944, under W. P. B. authorized programs, this shop produced all the trolley buses and 60 per cent of the street cars built in the country.

The company's four freight car plants in Hammond, Ind., and Michigan City, Butler, Pa., and Bessemer, Ala., presently occupied with war contracts for mortars, heavy artillery, shells and freight cars for the domestic railroads and for the Army, are scheduled for alterations to expedite ultimate production of domestic and foreign freight cars.

Jobs for Veterans—Emphasizing that remodeling is not interrupting war production, Mr. Barker said, "Today we have but one job, producing armament and vital transportation equipment, and we will stay on that job until victory is assured. At the same time we are making plans and providing facilities to fulfill post-war orders, thus preparing ourselves to offer employment coming as the result of those orders, not only to our present workers but also to our returning servicemen when their mission shall have been successfully completed. We are thus bending our first effort toward the production of war material and at the same time, without interfering with that production, planning to fulfill our post-war obligations."

To help provide employment the company is prepared, as soon as it gets the green light, to produce wholly new types of cars that are expected to aid the railroads in retaining a substantial part of their heavy war-time passenger traffic by raising travel comfort to new heights.

New Car Types—One of these new cars is a combination bar-lounge car de-

(*Continued on page 361*)

Calls for Bargaining on Pension Changes

B. of L. E. favors conferences with management; protests Latimer "partisanship"

John T. Corbett, assistant grand chief engineer and national legislative representative of the Brotherhood of Locomotive Engineers, appeared at House interstate and foreign commerce committee hearings this week to protest against the failure of the Railway Labor Executives' Association to submit its program for liberalizing the Railroad Retirement and Railroad Unemployment Insurance acts to collective bargaining procedures, and against Railroad Retirement Board Chairman Murray W. Latimer's "partisanship" in working on the R. L. E. A. program while refusing to discuss such work with non-affiliated unions or railroad management.

The hearings are on H.R. 1362, the bill embodying the R. L. E. A. program, which was introduced by Representative Crosser, Democrat of Ohio. Presentations of R. L. E. A. and Mr. Latimer were concluded at last week's sessions, and Mr. Corbett was preceded this week by Martin H. Miller, national legislative representative of the Brotherhood of Railroad Trainmen. Mr. Miller's statement revealed that B. of R. T. objections are based largely on what that organization regards as the failure of the bill to go far enough in liberalizing the present benefit provisions of the two acts.

Would Try Bargaining First—Mr. Corbett recommended in effect that the committee send the bill back to its sponsors with the suggestion that an effort be made to arrive at an agreed-upon program in collective bargaining conferences among all interested parties. The B. of L. E., he said, recognizes the "need for certain changes," but it is of the opinion that all proposals for changes "might properly be submitted to the representatives of all of the railroad labor organizations and to the managements of the railroads for their consideration before arrangements could properly be taken to have legislation introduced without any effort to proceed further with collective bargaining procedure."

Later on, the B. of L. E. representative said he was presenting "no brief that collective bargaining conferences or procedures might assure satisfactory results." But he pointed out that the present Retirement Act "was secured through collective bargaining procedures," adding that "we must have the records show that we favor the con-

tinuation of those collective bargaining procedures until there has been proper proof that such collective bargaining procedures were no longer of benefit. We submit that there has been no such demonstration of the uselessness of such procedure."

Wants Financially-Sound System—Other parts of Mr. Corbett's presentation indicated that the B. of L. E. is at the moment most concerned about the actuarial showing that taxes under the Carriers' Taxing Act are inadequate to support present Retirement Act benefits. It wants the retirement system put on a sound financial basis, and is confident that its members are ready to pay their share of any additional taxes necessary for that purpose.

Mr. Corbett's protest against R. R. B. Chairman Latimer's tactics followed upon a similar complaint registered earlier in the hearings by J. Carter Fort, vice-president and general counsel of the Association of American Railroads, and reported in the *Railway Age* of February 10, page 313. Disclaiming any desire on the part of the B. of L. E. to question the right of any citizen to present requests to Congress, Mr. Corbett nevertheless suggested that "there must be some question as to the propriety" of having but one portion of a group endeavor to have changes made in laws "for the purpose of providing selfish benefits for those whom they represent—at the expense of others who were refused the courtesy of consultation."

No Information From Latimer—"I now desire," he continued, launching his complaint against Mr. Latimer, "to have the records show that nearly a year ago I was informed that the chairman of the Railroad Retirement Board, Dr. Latimer, and one or more of the attorneys in the employ of that board had been engaged in the preparation of legislation which would propose a number of changes in the Railroad Retirement Act, the Carriers Taxing Act, and the Railroad Unemployment Insurance Act.

"Acting upon the information or report which had been made to me, I called Dr. Latimer by telephone and requested information which might confirm the report I had heard. I was informed by Dr. Latimer that he considered the assistance and work he had been engaged in as 'of a technical nature'—and that he would not provide information as to its exact nature as he considered is as something which might be known only to those with whom he had been working and assisting. There was the remark that it was quite probable that the tax rates which would be in the proposed bill would be about the same as had been printed in the 'committee print'—introduced in the Senate by Senator Wagner, but that it would be necessary to await the release of the bill from the printers before I might know of further data concerning it.

"Partisanship" Demonstrated—"We question the right or privilege of any public officer to take the position Dr. Latimer has taken and we believe that the refusal of Dr. Latimer to extend all officers of either the railroads or the railroad labor organizations the same information, the same assistance, and/or the same courtesies, demonstrates partisanship, and a most unpleasant lack of courtesy in a public official.

"The Railroad Retirement Act provides for one member of the Railroad Retirement Board to be appointed by the President as the representative of 'the public.' We submit the belief that locomotive engineers form a portion of our 'American public,' in addition to their positions as employees of the railroads of the nation. As a portion of the American public, and as the oldest group of railroad labor organizations, we protest the discourteous, prejudicial, and preferential attitude taken by the chairman of the Railroad Retirement Board toward the courteous request made to him by an officer of a group of workers who are contributing much to the funds of the Railroad Retirement Board and the salary of the representative of the public on that board.

"And that's that for Mr. Latimer."

"Reviews" Robertson Statements—Nor did Mr. Corbett pull any punches when he came to what he called his "review" of "certain statements" made in the hearings by D. B. Robertson, president of the Brotherhood of Locomotive Fireman & Enginemen and chairman of the R. L. E. A. committee which framed the proposals embodied in the bill. He challenged Mr. Robertson's claim that such a committee was appointed at a May 13, 1940, meeting of R. L. E. A. Mr. Corbett said he attended that meeting as representative of A. Johnston, grand chief engineer of the B. of L. E., who was then a member of R. L. E. A.; and he recalled no action with respect to such a committee. He added that the official records of the meeting verify his recollection.

Mr. Robertson's statement that R. L. E. A. members represent "80 per cent of the railroad workers" was characterized by Mr. Corbett as a "'tricky' remark, or claim," which "we must challenge." As for himself, Mr. Corbett said he represented "but one group. It may not be the largest. It is the oldest, and the best." He went on to say that the B. of L. F. & E. was first organized as the "Brotherhood of Locomotive Firemen"; and that it decided upon the present name at its 1906 Milwaukee, Wis., convention—"apparently," as Mr. Corbett put it, "in the hopes that it might improve its conditions by retaining some of the men promoted to the position of locomotive engineer."

An Exaggerated Death Report—Mr. Corbett was in service in Milwaukee at the time, and he recalled that "there was much excitement noticed amongst the delegates because of the claims expressed by certain officers . . . that the change of name 'meant the end of the Brotherhood of Locomotive Engineers in a very few months.'" It was a "real pleasure" for Mr. Corbett to have the committee's records show that the B. of L. E. "passed those months . . . and is continuing to advance and to increase its membership."

All of which was part of Mr. Corbett's explanation of the locomotive engineer's position as an "old head" and thoroughly skilled railroader, as compared with a fireman. And it brought him to his next charge that "the present efforts of Mr. Robertson must be interpreted by those whom I represent as another attempt by the employees in apprenticeship service to dictate the handling of the affairs of the master workman who has served his apprenticeship and who has received the promotion his services have deserved." It is Mr. Corbett's opinion that locomotive engineers and senior locomotive firemen "would refuse to favor the provisions of H. R. 1362 if they were fully informed as to what may be its effects, if and when it may be approved."

Tried to Promote Cooperation—That the B. of L. E. had made serious efforts to get collective bargaining procedures started was next brought out in Mr. Corbett's statement. He said he had discussed the matter last year with Chairman Lea of the committee and Representative Crosser, neither of whom opposed such a course, although Mr. Crosser did say that he did not think it proper for him, as author of the bill, to join in efforts which might delay enactment. Also Chairman Wheeler of the Senate committee on interstate commerce and Senator Johnson, chairman of the subcommittee which was considering the R. L. E. A. bill, "expressed their approval of the idea of such collective bargaining conferences." J. J. Pelley, president of the A. A. R., informed Mr. Corbett that "if the representatives of the railroad employees would meet with representatives of the railroads, arrangements would be made to have a committee of representatives of the railroads selected."

Mr. Corbett reported on the foregoing to Grand Chief Engineer Johnston, who thereupon wrote an August 2, 1944, letter to J. G. Luhrsen, executive secretary of R. L. E. A., suggesting that a request be made for conferences with management "to avoid complications that might arise with reference to the legality of the act and the amendments." Mr. Johnston further suggested that it "would be better to agree on a united front before a congressional committee." Replying on August 30, 1944, Mr. Luhrsen said: "The sponsors of this legislation have taken into consideration the constitutionality of the proposed amendments which you raise and have introduced a bill and advanced their reasons in support of it. Those disagreeing have the privilege of appearing before the same committee to offer their opposition or support."

Would Let Evolution Continue—Turning to a discussion of some of the bill's specific provisions, Mr. Corbett expressed the B. of L. E.'s concern that an adverse court decision on the amendments might raise a question as to the status of the present Retirement Act. He noted that the present bill has evolved from five previous ones, and expressed the hope that the evolutionary process would not be terminated "as there appears a real need for further progress and improvement."

The B. of L. E. questions whether the taxes proposed will "guarantee the continued solvency of the funds of the Railroad Retirement Act." It also questions the desirability of bringing in additional employees, such as those of forwarders and

railroad trucking affiliates, as proposed. In this connection, Mr. Corbett stated that the higher paid employees carry the main burden of the retirement system. He undertook to show that "any and all employees with wages of $1,800 or less a year or with average wages of less than $150 a month must be actual liabilities upon the funds."

Questions Latimer Statistics — He questioned the statistical data presented by Mr. Latimer and the conclusions drawn therefrom by the R. R. B. chairman, particularly the contention that a 1.5 per cent increase in the retirement tax should be sufficient to take care of the present deficit, which was shown by the latest actuarial report to require an increase of some 5 per cent in taxes.

Mr. Corbett repeated himself many times in urging the committee to have in mind the prime rule of railroading—"safety first," and to give "thoughtful attention and consideration" to "any proposal to gamble with the safety of the funds." The B. of L. E. believes that there "must be, and should be some immediate increase" in the retirement taxes, and it is of the further opinion that "every effort should be made, and must be immediately made, to secure the services of the most outstanding actuarial experts in the nation in order to determine the amounts of taxes to be levied." Mr. Corbett had previously contrasted Mr. Latimer's estimate that a 1.5 per cent increase would be adequate with what appears to be the "unanimous agreement that the funds of the Railroad Retirement Act are 'a somewhat sick patient.'" And he asked: "Shall we meekly accept further remedies suggested by the doctor who recommends such 'soothing syrup' for an evidently very sick patient?"

An R. R. B. Attempt to "Spread Out"—Among other provisions of the bill questioned by Mr. Corbett was the proposal to make the Carriers Taxing Act Title II of the Railroad Retirement Act with the Retirement Board, instead of the Bureau of Internal Revenue, collecting the retirement taxes. The B. of L. E. representative called this "another attempt to have the Retirement Board 'spread out'."

National Legislative Miller of the B. of R. T. expressed that organization's views with respect to various specific provisions of the bill. Among other things, the B. of R. T. would modify the bill to provide for a flat 10 per cent increase in all annuities and pensions. This, said Mr. Miller, would be more important to employees in train service than the proposed increases in minimum annuities.

Would Retain Appeal Provisions—In providing for widows', children's, and parents' annuities, as the bill does, the B. of R. T. would keep also the present death benefit provisions which the bill would drop. Also, Mr. Miller protested against the proposal to limit the right of appeal from Retirement Board rulings to the United States Circuit Court of Appeals; and he wanted a simpler formula than that proposed for arriving at the amount of annuities for widows, children, and parents. The bill's proposal to increase the maximum unemployment benefits to $5 per day appealed to Mr. Miller as a "greatly needed" change.

When questioned about the additional retirement taxes proposed in the bill, Mr. Miller expressed his view that they would prove inadequate to support the new benefits. He is of the opinion that the majority of the B. of R. T. members would be willing to pay their share of the taxes found necessary to make the present retirement system sound and to support the additional benefits. Questioned by Chairman Lea as to the proper relationship between a special system and the general social security system, Mr. Miller replied that he was of the opinion that railroad employees "must not get too far out of line." He conceded that he wouldn't want to be supporting a system that would be regarded as unduly preferential of any group.

Schoene Sums Up for R. L. E. A.—R. L. E. A.'s presentation in support of the bill was concluded with a statement from the Robertson committee's counsel—Lester P. Schoene of the Washington, D. C., firm of Schoene, Freehill, Kramer & Fanelli. Mr. Schoene stated that he had assisted in the drafting of the bill, and denied that it was a "cut and dried proposition" submitted to R. L. E. A. by Mr. Latimer. At the same time he didn't want to minimize "our tremendous indebtedness" to Mr. Latimer.

Mr. Schoene contined with a prepared statement rounding up the R. L. E. A. case. He anticipated that the railroads would be in opposition, "as they have opposed vigorously every piece of humanitarian legislation that has come before Congress, with the exception of the Railroad Retirement Act of 1937, when they gave their acquiescence to a policy that Congress had twice enacted into law, and did it on the stipulation that they would be allowed to unload their private pension rolls on the Railroad Retirement System and thus have the employees pay half of the accumulated pension liabilities."

Hobbs Reorganization Bill Passed by House

The House, on February 14, passed H. R. 37, the bill sponsored by Representative Hobbs, Democrat of Alabama, to amend Section 77 of the Bankruptcy Act in such a way as to restrict the power of the Interstate Commerce Commission to reduce the capitalization of railroads reorganized under that statute, and to give the federal courts additional responsibilities in reviewing plans proposed by the commission. Provisions of the bill, which now goes to the Senate, were outlined in detail in the *Railway Age* of February 10, page 312.

Representation of Employees

Winning two recent elections wherein it was challenged by the Brotherhood of Railroad Trainmen, the Order of Railway Conductors has retained the right to represent Baltimore & Ohio road conductors and San Diego & Arizona Eastern road brakemen. Results of the elections have been certified by the National Mediation Board, the vote in the B. & O. case being 843 for the Conductors to 671 for the Trainmen; the O. R. C. won the S. D. & A. E. contest by a vote of 17 to 9.

The B. of R. T. also lost a recent Illinois Central election which the Illinois Central System Yardmasters' Association won by a vote of 101 to 72, thus retaining its right to represent yardmasters and assistant yardmasters. The Brotherhood of Locomotive Firemen & Enginemen has supplanted the Amalgamated Association of Street, Electric Railway, and Motor Coach Employees of America as representative of Oakland Terminal engineers and firemen; while previously unrepresented assistant chief, night chief, trick, relief, and extra train dispatchers on the Atlantic Coast Line have chosen the American Train Dispatchers Association. Train porters employed by the Central of Georgia and the Chicago & Eastern Illinois, previously unrepresented, have chosen the Brotherhood of Sleeping Car Porters.

Specifications for Bus Heaters

Specifications governing installation and use of heaters and heating equipment on passenger carrying motor vehicles have been prescribed for common and contract carriers by the Interstate Commerce Commission. The specifications were promulgated with Division 5's report and order, dated January 27, in Ex Parte No. MC-4.

Stevens Institute Honors Duer

John V. B. Duer, chief electrical engineer, Pennsylvania, was one of nine leading engineers and industrialists to receive a newly established honor award for "notable achievement," at the dinner observing the 75th anniversary of the granting of the charter to Stevens Institute of Technology, held in New York, February 15. Mr. Duer was cited for his accomplishments "in the engineering field of railroad electrification."

Congressman Fights Train Cut Under O. D. T. Order 47

An assertion that "the railroads apparently are taking advantage of" the Office of Defense Transportation's General Order 47 was made by Representative Simpson, Republican of Illinois, in a letter to O. D. T. Director Johnson, reprinted, with other correspondence as an extension of remarks, in the February 13 Congressional Record. This order, as noted in *Railway Age* of January 20, page 198, prohibited railroads, except with O. D. T. permission, from operating after March 1 a passenger train schedule on which the occupancy of seats and space did not average 35 per cent during the month of November, 1944.

The basis of the congressman's complaint was "reliable information" from brotherhood "legislative representatives" that the Chicago & Illinois Midland would discontinue certain passenger train operations between Springfield, Ill., and Pekin on February 28, under authority of this order. Petitions protesting this action, signed by "some 600 citizens," had been received, Mr. Simpson said in a letter to

War Mobilization Director Byrnes suggesting that "some clarifying directives" should be issued in connection with the O. D. T. order, which was issued in response to a request from Mr. Byrnes. "Certain railroads can take an unfair advantage" of this order, he wrote, but "the railroads should not be allowed to make communities suffer."

In one letter, signed by V. T. Corbett, assistant director of the passenger section of the O. D. T. Railway Transport Department, Colonel Johnson was quoted as saying the order would be "rescinded" "as soon as the present crisis is passed."

One of the letters was sent by Mr. Simpson to George Barrett, attorney general of Illinois, suggesting that "injunction proceedings" be started if the facts be found as represented, since protest to the O. D. T. had been "to no avail." The congressman made it clear that he did not object to that part of the order prohibiting operation of "resort" trains.

January Employment 2.47 Per Cent Above Previous Year

Railroad employment decreased 0.67 per cent—from 1,400,129 to 1,390,718—during the one-month period from mid-December, 1944, to mid-January, 1945, but the January total was 2.47 per cent above the January, 1944, total, according to the preliminary summary based on reports from Class I line haul roads and prepared by the Bureau of Transport Economics and Statistics of the Interstate Commerce Commission. The index number, based on the 1935-1939 average, was 141.7, as compared with 139.4 for the previous month and 138.3 for January, 1944.

January, 1945, employment was above that of the corresponding 1944 month in all groups except train and engine service, where a decrease of 0.13 per cent was noted. In other categories the range of increases was from 1.68 per cent for transportation, other than train, engine and yard service, to 6.78 per cent in maintenance of way and structures. The 0.67 per cent decline from the previous month was the net result of drops in five groups and increases in two. These changes were under one per cent, except that the yardmasters, switch-tenders and hostlers transportation group showed an increase of 1.02 per cent, while the transportation, other than train, engine and yard service category had a decline of 2.64 per cent.

Bills in Congress

Another uniform rate bill has been introduced in the House by Representative Luther A. Johnson, Democrat of Texas. It is H. R. 2041 "to amend the Interstate Commerce Act to provide for the establishment of a uniform classification and uniform scale of class rates for railroad freight."

Representative Beckworth, Democrat of Texas, has introduced H. R. 2012, "to provide for federal participation in the financing of certain aeronautical developments." The bill would authorize an appropriation of $50,000,000 per year from which the Secretary of War, the Secretary of the Navy, and the Administrator of Civil Aeronautics, acting jointly, would be authorized to make grants when they determine that it would be in the national interest to extend financial assistance to any individual or company in carrying out experimental work "in connection with the development of new types of aircraft or the improvement of existing types of aircraft, or in connection with other developments in the science and art of flight."

Senate Committee Approves Two Bills

The Senate committee on interstate commerce on February 13 voted to report S. 46 and S. 47 favorably to the Senate. Both bills were introduced by Chairman Wheeler of the committee.

S. 46 would amend the Locomotive Inspection Act of February 17, 1911, as amended, to provide for the appointment of five additional inspectors, and to provide for adjustments in salaries. The salary of the director of locomotive inspection would be increased from $7,500 per year to $8,000; assistant directors would get $7,000 instead of $6,000; and inspectors would get $4,600 instead of $4,000.

Amending the Interstate Commerce Act in various respects, S. 47 would carry out one of the legislative recommendations of the Interstate Commerce Commission's annual report. It would give the commission authority to prescribe rules for the extension of credit by express companies; modify the act's provision's relating to the service of notice in commission proceedings; and strengthen the commission's authority with respect to examining accounts of companies furnishing railroads with cars or protective services to perishable freight against heat or cold. A similar bill passed the Senate last year, but had not been acted upon in the House when the seventy-eighth Congress died.

Transverse Fissures Blamed for "Viking" Derailment

A broken rail, the result of the presence of transverse fissures, caused the derailment on December 24, 1944, near Poplar Grove, Ill., of eastbound Chicago & North Western passenger train No. 522, "The Viking," according to the report of an Interstate Commerce Commission investigation made under the supervision of Commissioner Patterson. Two passengers were killed and 35 passengers and 3 employees were injured.

The accident occurred on tangent single-track main line, the grade being 0.65 per cent descending for eastbound trains. The track structure consisted of 90-lb. rail, rolled and laid in 1930, on 23 treated ties per rail length, fully tie-plated, single-spiked, provided with 4-hole angle bars 26 in. long, and ballasted with 24 in. of gravel.

The train, made up of a locomotive and 15 passenger-train cars, was about 0.97 mile east of Poplar Grove station, on the line from Minneapolis to Chicago via Beloit, Wis., when its twelfth and thirteenth cars were derailed while it was moving about 45 m. p. h. The engine and first 11 cars, remaining coupled, stopped with the front of the engine about 2,900 ft. beyond the point of derailment. The two rear cars remained coupled and stopped with the rear end 1,120 ft. east of the same point. The two derailed cars, both coaches, came to rest on their sides, down an embankment, about 660 ft. east of the point of derailment. The eleventh to fifteenth cars, inclusive, were damaged.

After the accident it was found that a rail on the south side of the track was broken in many pieces. Transverse fissures were found at six breaks, none of which extended to the outer surface of the rail. These fissures covered from 10 to 70 per cent of the cross sectional area of the rail head. It appeared that the failure of the rail occurred when the front of the train passed over it, one 5 in. piece between two breaks being forced out of alinement, and that other fractures then occurred as the wheels jumped across this gap. This piece presumably was displaced before the rear truck of the eleventh car passed over it, causing the next two cars to be derailed. Apparently the two last cars also were derailed, but were rerailed when the wheels came in contact with the 11-in. forward portion of the fractured rail that remained in normal position attached to the next rail.

The report pointed out that the track was last inspected by the section foreman about 32 hrs. before the accident, no defective condition being observed. A rail-detector car was operated over this territory in December, 1941, and the next test was scheduled for 1945, the spacing of such tests being determined by the record of rail failures and the tonnage moved over the track.

O. D. T. Appointment

At the request of the Office of Defense Transportation, Arthur R. Mahaney, formerly assistant director of the O. D. T. Division of Traffic Movement, has returned temporarily to the staff of that organization to serve as assistant director of the Railway Transport Department, according to an O. D. T. announcement. Mr. Mahaney, formerly in the employ of the Pennsylvania, left the O. D. T. in July, 1944, after having spent 2½ years there. His return was asked "to assist in activities neeessitated by the existing emergency in rail transportation," it was said.

Medal of Honor Award

Upon recommendation of the Committee on Award of Medals of Honor, approved by the Interstate Commerce Commission, President Roosevelt has bestowed a medal of honor on Bert L. Sanders, Kokomo, Ind., employed as a plant guard by the General Electric Company at Kokomo. The medal was awarded under the Act of February 23, 1905, which provides for bronze medals of honor in recognition of outstanding feats of bravery connected with saving of life upon railroads.

The award was based upon Mr. Sanders' rescue of two children, a three-year-old girl and her two-year-old brother, from a Pennsylvania track, on which a passenger train was approaching at Kokomo, on March 6, 1943.

About 1:20 p.m., on that day, Mr. Sanders was on his way to the guard cabin of the General Electric Company, located near the crossing of Vaile avenue with the railroad. As he neared the cabin he heard a train approaching from the west and at the same time heard a warning

shout. Looking toward the approaching train, he saw the children standing on the highway crossing some 120 feet distant. He started running toward them and when he reached the crossing he lifted the girl from the track but discovered that the boy's foot was caught between the running rail and the guard rail. He succeeded in freeing the boy's foot from its wedged position, grabbed the children in his arms and leaped to safety, clearing the locomotive as it passed by about two feet. The speed of the train at that time was between 20 and 30 m.p.h.

Fifty-three medals, including Mr. Sanders', have been awarded since the enactment of the Medals of Honor Act in 1905.

Tying Frisco Trucks to Rails

The Interstate Commerce Commission has received from Examiner David Waters a proposed report recommending that various truck routes acquired from time to time by the Frisco Transportation Company from independent operators be now restricted by the imposition of specific conditions designed to insure that the highway freight services remain auxiliary to St. Louis-San Francisco rail service.

The proposed report in No. MC-89913 (Sub-No. 1) embraces also 10 other proceedings. It is a follow-through from Division 5's August 1, 1944, decision in the so-called *Campbell case*, No. MC-C-293. As noted in the *Railway Age* of August 26, 1944, page 348, the division there considered a complaint filed by independent truckers and found in effect that railroads purchasing independent truck lines do not acquire operating rights as broad as those enjoyed by the vendors but must confine services subsequent to the purchase to those which are auxiliary or supplemental to railroad service.

In holding that the direct all-motor operations complained of were "unauthorized," the division relied upon a general condition attached to the certificates then under consideration, that condition stipulating that the authority granted was subject "to such further limitations or restrictions as the commission might later find it necessary to impose in order to insure that the service would be auxiliary or supplemental to the train service of the railway and would not unduly restrain competition." The division entered no order in the *Campbell case*, but has since reopened the proceedings considered in the present proposed report.

The certificates involved include those covering operations between Joplin, Mo., and Miami, Okla.; Joplin and Carthage, Mo.; Hugo, Okla., and Paris, Tex.; Memphis, Tenn., and Blytheville, Ark.; Memphis and Walnut Ridge, Ark.; and Blytheville and Lake City, Ark. In the reports approving some of these acquisitions, the aforementioned general condition was not imposed; or, as the examiner put it, the condition was "inadvertently omitted." Division 5's order reopening the proceedings provided that an examiner's proposed report would be served on the parties; and the Waters report is it.

Generally, the examiner finds that conditions which the commission has been applying to public-convenience-and-necessity cases where railroads are involved should also be applied to railroad operations acquired by purchase from independents. These conditions are:

1. The service by motor vehicle to be performed by (the designated motor carrier) shall be limited to service which is auxiliary to or supplemental of rail service of (the designated railroad).
2. (The designated motor carrier) shall not serve any point not a station on the rail line of (the designated railroad).
3. ("Rail-haul" condition 3) Shipments transported by (the designated motor carrier) shall be limited to those which it receives from or delivers to (the designated railroad) under a through bill of lading covering, in addition to movement by (the designated motor carrier), a prior or subsequent movement by rail.
3. ("Key-point" condition 3) No shipments shall be transported by (the designated motor carrier) as a common carrier by motor vehicle between any of the following points, or through or to or from more than one of said points: (specified key points).
4. All contractual arrangements between (the designated motor carrier) and (the designated railroad) shall be reported to us and shall be subject to revision, if and as we find it to be necessary in order that such arrangements shall be fair and equitable to the parties.
5. Such further specific conditions as we, in the future, may find it necessary to impose in order to restrict the operation of (the designated motor carrier) to service which is auxiliary to, or supplemental of, rail service of (the designated railroad).

In imposing the foregoing conditions on the Frisco operations, Examiner Waters would have the commission follow its usual practice of using the "rail-haul" or the "key-point" condition 3, or modifications of them, as circumstances may warrant in specific situations. February 8 is the date of service of the proposed report, and exceptions must be filed and served on all parties in interest within 20 days from that date. If exceptions are filed, replies to exceptions may be filed within 10 days after the final date for filing of exceptions.

March 2 Set for U. S. Replies in Anti-Trust Dismissal

March 2 has been set by Federal Judge John Delehant at Lincoln, Neb., as the date on which Federal attorneys must file replies to affidavits filed by defendants in support of a motion to dismiss the government's anti-trust suit against 47 western railroads, their chief executives and the Association of American Railroads. The motion to dismiss was filed on January 2.

Emergency Board in Central of Georgia Dispute

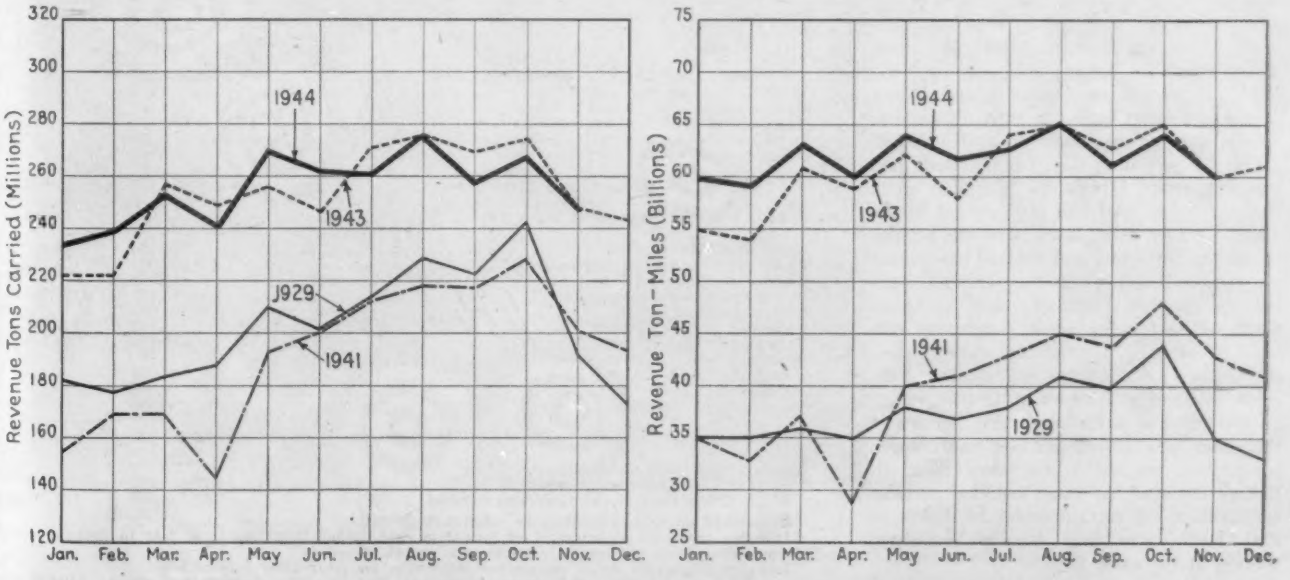
President Roosevelt on February 10 created an emergency board to investigate a dispute which had brought a strike threat to the Central of Georgia. The Brotherhood of Railroad Trainmen represents the employees concerned, and the dispute involves the application of a National Railroad Adjustment Board award and other matters relating to applications and interpretations of working rules.

Members of the board are: Nathan Swain, former justice of the Supreme Court of Indiana; Ridgely P. Melvin, justice of the Maryland Court of Appeals, and Russell Wolfe, attorney of Philadelphia, Pa.

Freight Car Loading

Carloading reports for the week ended February 10 were so delayed that the Association of American Railroads had not announced the total when this issue went to press.

Loading of revenue freight for the week



Revenue Tons and Revenue Ton-Miles—1944 Compared with 1929, 1941 and 1943

ended February 3 totaled 738,680 cars, and the summary for that week, as compiled by the Car Service Division, A. A. R., follows:

Revenue Freight Car Loading

For the week Ended Saturday, February 3

District	1945	1944	1943
Eastern	131,447	157,276	151,200
Allegheny	146,288	177,314	164,250
Pocahontas	53,222	56,274	51,874
Southern	126,251	128,366	120,715
Northwestern	83,774	89,822	79,342
Central Western	126,231	124,611	114,363
Southwestern	71,467	72,051	73,770
Total Western Districts	281,472	286,484	267,475
Total All Roads	738,680	805,714	755,514
Commodities			
Grain and grain products	41,732	55,270	52,018
Live stock	14,031	15,336	12,692
Coal	157,564	182,783	174,154
Coke	14,255	15,082	14,869
Forest products	43,449	46,208	37,260
Ore	10,215	14,871	15,328
Merchandise l.c.l.	93,736	102,475	91,498
Miscellaneous	363,698	373,689	357,695
February 3	738,680	805,714	755,514
January 27	758,870	810,890	734,670
January 20	777,320	798,650	703,294
January 13	782,387	779,531	755,498
January 6	682,967	769,629	717,176
Cumulative Total, 5 Weeks	3,740,224	3,964,414	3,666,152

In Canada.—Carloadings for the week ended February 6 totaled 65,471, as compared with 65,342 for the previous week, and 67,802 for the corresponding period last year, according to the compilation of the Dominion Bureau of Statistics.

Total for Canada:	Total Cars Loaded	Total Cars Rec'd from Connections
Feb. 3, 1945	65,471	31,180
Feb. 5, 1944	67,802	39,272
Cumulative Totals for Canada:		
Feb. 3, 1945	311,144	165,018
Feb. 5, 1944	337,702	190,446

Finds a Racial Discrimination Complaint Weakly Based

Examiner Claude A. Rice has recommended in a proposed report that the Interstate Commerce Commission dismiss a complaint against the Gulf, Mobile & Ohio, filed by John L. LeFlore and Alfred S. Crishon, alleging that the road had refused, because they are negroes, to sell them Pullman space, or to serve them lunch in the diner, although they held first-class railroad tickets, on a journey from Meridian, Miss., south to Mobile, Ala., on June 27, 1943. Reparation was sought, and also a "cease and desist" order against the carrier. The proceeding was docketed as No. 29130.

On the preceding day, complainants had traveled from Mobile to Meridian in a Pullman room, and had been served in the diner. Under state laws, separate accommodations for white and colored passengers are required, and it was the carrier's practice to provide Pullman room space at berth or seat rates when sought by colored passengers, if available, except when the number of such passengers was sufficient to justify assignment of the entire open portion of a Pullman car. Service in the diner was afforded white and colored passengers, but not at the same time, although the road has since installed curtains to partition off certain tables in diners so that both races may legally be seated therein at the same time.

No Pullman Seats—Pullman space on the road's southbound St. Louis-Mobile streamlined train was assigned at St. Louis, although it could be secured from the conductor on boarding the train, if available. The complainants had asked for Pullman space for the southbound trip on June 26, and again at Meridian on June 27, before boarding the train, and were told that none was available. On boarding the train, they again asked for Pullman space and again were told that none was available. They were served breakfast in the diner, and white passengers were required to wait for service until they ate.

Because of a derailment on the line, the train was delayed at Meridian and left more than 4 hrs. late. It was not the usual practice to serve lunch on the train, and the diner was not stocked with food and linen to do so, but sandwiches and drinks were served on bare tables at lunch time because of the delay. When the complainants went to the diner and sought service, white passengers were being served, so the steward offered to serve them at tables near their coach seats, but they "wanted to be served in the diner." They therefore went without food, the report stated, until after their arrival at Mobile at 4:19 p. m., at which time they consulted a physician with complaints that they had become ill from lack of food.

The examiner found that several seats in the open sections of the Pullmans were unoccupied when the complainants applied for seat space at Meridian, but "it is not shown that other passengers under like conditions were provided with seats in these Pullman sleepers. The record is silent concerning preference accorded to any other passenger in respect of Pullman car accommodations. The evidence falls short of proving undue prejudice."

Coach Service Available—The examiner found further that "the dining car

Selected Income and Balance-Sheet Items of Class I Steam Railways

Compiled from 131 reports (Form IBS) representing 135 steam railways
(Switching and Terminal Companies Not Included)

Income Items	All Class I Railways — For the month of November 1944	For the month of November 1943	For the eleven months of 1944	For the eleven months of 1943
1. Net railway operating income	$91,578,935	$94,179,007	$1,035,410,266	$1,290,046,345
2. Other income	22,805,785	19,466,675	171,878,377	161,981,942
3. Total income	114,384,720	113,645,682	1,207,288,643	1,452,028,287
4. Miscellaneous deductions from income	2,525,284	2,893,146	34,985,905	28,375,734
5. Income available for fixed charges	111,859,436	110,752,536	1,172,302,738	1,423,652,553
6. Fixed charges:				
6-01. Rent for leased roads and equipment	12,156,651	12,846,015	145,742,519	157,480,657
6-02 Interest deductions[1]	33,377,166	34,660,267	370,155,400	393,935,009
6-03. Other deductions	118,538	125,490	1,404,504	1,361,776
6-04. Total fixed charges	45,652,355	47,631,772	517,302,423	552,777,442
7. Income after fixed charges	66,207,081	63,120,764	655,000,315	870,875,111
8. Contingent charges	2,700,983	2,407,199	30,166,477	26,229,050
9. Net income	63,506,098	60,713,565	624,833,838	844,646,061
10. Depreciation (way and structures and Equipment)	26,925,602	26,438,679	294,428,586	289,813,170
11. Amortization of defense projects	17,519,103	14,340,508	172,149,247	128,685,840
12. Federal income taxes	104,381,126	106,804,141	1,242,185,054	1,281,724,958
13. Dividend appropriations:				
13-01. On common stock	64,208,633	56,865,623	173,805,532	155,434,730
13-02. On preferred stock	10,277,006	6,212,029	49,671,657	31,400,582
Ratio of income to fixed charges (Item 5 ÷ 6-04)	2.45	2.33	2.27	2.58

Selected Asset and Liability Items	All Class I Railways — Balance at end of November 1944	Balance at end of November 1943
20. Investments in stocks, bonds, etc., other than those of affiliated companies (Total, Account 707)	$562,377,212	$588,890,604
21. Cash	1,296,882,743	1,296,276,539
22. Temporary cash investments	1,883,573,029	1,670,410,255
23. Special deposits	216,649,093	178,852,130
24. Loans and bills receivable	447,188	227,656
25. Traffic and car-service balances—Dr.	40,426,778	38,164,312
26. Net balance receivable from agents and conductors	145,963,917	170,709,314
27. Miscellaneous accounts receivable	636,191,316	630,684,327
28. Materials and supplies	608,237,127	526,007,523
29. Interest and dividends receivable	39,150,900	33,456,060
30. Rents receivable	2,551,144	1,824,274
31. Other current assets	66,021,366	58,821,330
32. Total current assets (Items 21 to 31)	4,936,094,601	4,605,433,720
40. Funded debt maturing within 6 months[2]	252,204,278	78,049,629
41. Loans and bills payable[3]	11,588,386	14,461,511
42. Traffic and car-service balances—Cr.	220,572,324	154,450,896
43. Audited accounts and wages payable	531,414,498	457,710,414
44. Miscellaneous accounts payable	129,514,461	116,538,615
45. Interest matured unpaid	50,108,547	48,258,296
46. Dividends matured unpaid	7,595,797	7,644,009
47. Unmatured interest accrued	76,630,988	74,404,127
48. Unmatured dividends declared	77,808,792	65,688,257
49. Unmatured rents accrued	32,704,178	31,348,802
50. Accrued tax liability	1,948,018,096	1,774,376,414
51. Other current liabilities	107,290,540	82,934,082
52. Total current liabilities (Items 41 to 51)	3,193,246,607	2,827,815,423
53. Analysis of accrued tax liability:		
53-01. U. S. Government taxes	1,815,653,697	1,637,096,749
53-02. Other than U. S. Government taxes	132,364,399	137,279,665

[1] Represents accruals, including the amount in default.
[2] Includes payments of principal of long-term debt (other than long-term debt in default) which will become due within six months after close of month of report.
[3] Includes obligations which mature not more than one year after date of issue.
Compiled by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission. Subject to revision.

attendants, upon request, would have placed a table near the coach seats occupied by complainants and provided complainants with the same kind of food and the same character of service as afforded in the diner, at prices charged in the diner; that complainants' application to the dining car steward for service was restricted to service within the diner; and that, under the circumstances, the failure of defendant to serve food to complainants in the diner at midday did not contravene section 3" of the Interstate Commerce Act.

Concluding, the report noted that service now available to G. M. & O. colored patrons "is not inferior to the service provided under like conditions for white passengers, and in some instances it is more desirable," in that coaches assigned to colored passengers are air-conditioned, although, because of heavy wartime travel, it is not always possible to assign enough air-conditioned coaches to accommodate all white passengers.

Pullman-Standard Plans Improvements

(*Continued from page 355*)

signed for transformation into a "night club" and movie theater. The forward half contains a cocktail bar and soft-cushion seats. At night seats can be folded against the wall, clearing a 9-ft. by 20-ft. floor for dancing. Music will be supplied by a phonograph or radio concealed in a cubicle in the center of the car.

The rear half of this new car, according to the drawings, can be an ultra-modern observation-lounge during the day while after dark chairs can be swung inward into rows facing the cubicle in the center of the car, in which movies can be projected from the rear on a screen.

Another car is the day-nite coach, equipped with a revolutionary type seat providing greater restfulness during the day and chaise longue sleeping comfort and semi-privacy at night.

A third car is a diner which employs a diagonal seating arrangement that permits patrons to enter and leave any seat without disturbing others. It is designed to speed up service and eliminates congestion.

A fourth type is the "threedex" coach seating 112 passengers and built on three separate levels, It will have card nooks and multiple washrooms.

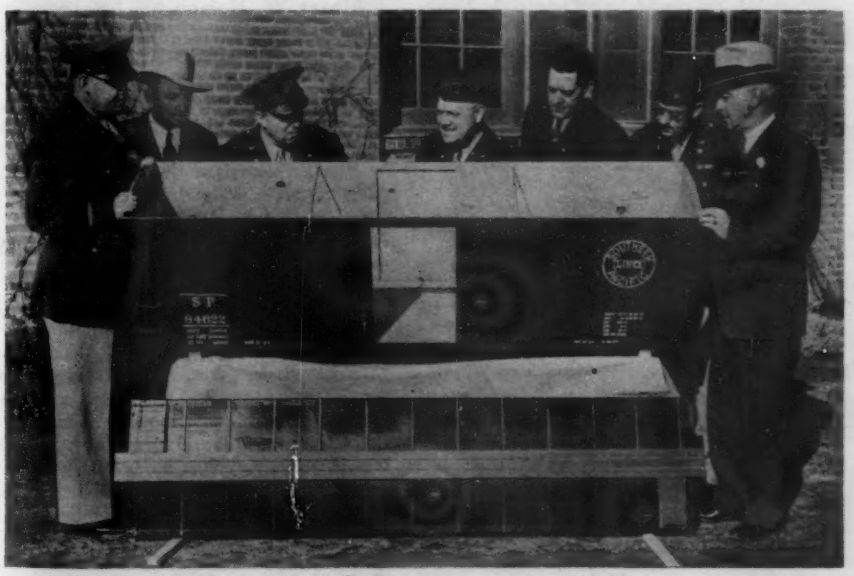
Other kinds of sleeping cars include the duplex-roomette, a car of 24 individual rooms having private toilet and washing facilities, such space being expected to cost little, if any, more than a lower berth; and the three-tier sleeper, whose high capacity of 42 berths is intended to reduce the cost of sleeping accommodations to a minimum.

Other Improvements—Efforts to make tomorrow's train travel more comfortable have not been confined to car arrangements alone, Mr. Barker pointed out. He said Pullman-Standard engineers have designed an entirely new method of handling baggage that relieves the passenger of all worry the minute he enters the station. This system calls for central storage on the train, with loading and unloading through the side of the car so as not to block aisles and vestibules. All luggage would be tagged according to destination and always be accessible to passengers upon presentation of their check stubs, he said.

Many mechanical and structural improvements will increase safety and comfort in new trains, Mr. Barker continued. Better insulation and air conditioning will seal out noises, while an advanced type of truck will reduce car sway at high speeds and deliver a much quieter and smoother ride, he said.

Electrically-controlled brakes will stop trains automatically and much faster, smoother and safer than ever before, Mr. Barker added, and new type couplers will lock cars firmly to one another, eliminating starting and stopping jolts and preventing the telescoping of cars under impact. Another big stride in increasing safety, he went on, is the hot box alarm, a device installed on journal boxes which automatically rings a warning buzzer and flashes a danger signal when bearings become overheated, thus preventing accidents from hot boxes.

* * * *



Army Employs Scale Model Box Car as Teaching Aid

Proper bracing and loading of freight, in addition to devising improved methods of loading and handling, are demonstrated on this scale model of a 50-ton, 40-ft. box car, at the Army's Fort Mason school, at San Francisco, Cal. The car, which was built to a scale of 2 inches to the foot at the Bayshore shops of the Southern Pacific, is made of plywood and steel and has a removable roof.

Would Stop Peoria-Davenport R. I. Truck Service

Joint Board No. 54, composed of Louis Lebin of Illinois and George L. McCaughan of Iowa, has made a report to the Interstate Commerce Commission, recommending that an order be issued requiring the Rock Island Motor Transit Company, subsidiary of the Chicago, Rock Island & Pacific, to cease and desist from providing "independent and direct all-motor service under motor carrier billing and rates" between Peoria, Ill., and Davenport, Iowa. The joint board's report is in No. MC-C-406.

The proceeding arose out of a complaint filed by the Dohrn Transfer Company, which protests against operations in which it does not participate; but, as the report put it, "alters its position, somewhat inconsistently, to find no fault with the transportation of these all-motor shipments in instances where it participates with defendant in joint-line movements." Nevertheless, the board found that the operations complained of are unauthorized under Transit's certificates on the route involved.

This Peoria-Davenport route was formed by "tacking" at Moline, Ill., separate authorities which Transit has to operate between Peoria and Rock Island, Ill., and between Silvis, Ill., and Des Moines, Iowa. The Peoria-Rock Island certificate was granted on a showing of public convenience and necessity, and it is subject to the familiar conditions designed to insure that the trucking service shall remain auxiliary to Rock Island rail service, including the so-called "key point" provision prohibiting the transportation by truck of shipments between, through, or to or from La Salle, Ill., Peoria, and Rock Island. The Silvis-Des Moines certificate was obtained by purchase from an independent trucker, and the commission's approval of the transaction was made subject to a general condition reserving to the commission the right to impose any future restrictions which might become necessary to insure that the service remained auxiliary or supplemental to R. I. rail service.

In setting up its Peoria-Davenport route Transit avoided application of the Peoria-Rock Island certificate's "key point" restriction by operating the through service via Moline, Ill., and Bettendorf, Iowa, thus by-passing Rock Island. The joint board noted, however, that this authority also includes a general condition requiring that the service remain auxiliary to, or supplemental of rail service. And it found that this condition governs "such portion of the through service as is performed between

Peoria and Moline." With respect to the Moline-Davenport segment, the board found, in Division 5's report approving Transit's acquisition of this route, evidence that such approval contemplated limiting Transit "to the performance of auxiliary or supplemental service."

In recommending the cease and desist order, the joint board also suggested that the commission might give consideration to a revision of the Transit certificates "for the purpose of determining what, if any, conditions or restrictions should be imposed in order to clarify the scope of the authorized operations."

House Passes I. C. C.'s Fiscal '46 Appropriation Bill

The House on February 8 passed and sent to the Senate the Independent Offices Appropriation Bill for the fiscal year ending June 30, 1946. As noted in the *Railway Age* of February 10, the bill, H. R. 1984, carries $7,890,529 for the Interstate Commerce Commission and $88,000,000 for the Public Roads Administration.

Blizzard in New England

The New England railroads, which had been able, without special difficulty, to cope with the heavy snows that fell during the widespread January tie-up in the East, and which had, on January 30, reported operations as "entirely normal," on February 8, were blanketed by one of the most severe blizzards to sweep through northern New England in 30 years. The new snow was reported in depths of from 4 to 14 in., with drifts at a number of points in excess of 15 ft. The Boston area was particularly hard hit.

The New Haven suffered delays in all operations on the day of the storm, reporting that in some cases the wet snow had frozen to a 3-in. diameter on overhead wires, causing a widespread failure of pole lines. As a result communications were disrupted and there was a loss of power for signals, enginehouse and yard facilities. All operations, however, were about normal early on February 9, except at the easterly end of the railroad, where general recovery followed a day later. The railroad's own and all extra snow removal forces were quickly recruited, and these were augmented by Army and Navy personnel. "Movement of freight traffic," the New Haven reported on February 13, "which was severely retarded for 48 hours during and following the storm, has improved materially although the preponderant movement of cars, which was generally in a westward direction before the storm, has now reversed itself since the storm, and probably reflects the improved conditions on the connecting lines to the west."

The Boston & Maine, having "hired every available man or high school boy" and with its regular employees "exhausted from two days and nights of efforts to get freight trains and cars moving," on February 10, appealed to the Army, the Navy and the Coast Guard for help to shovel out the "badly needed yards and switches." The Quartermasters Corps offered 150 Italian prisoners-of-war, but the railroad was forced to decline this offer because of a notification received some time before from labor union officials that their members would not work if prisoners-of-war were employed by the railroad. The B. & M. announced that M. E. Shinnick, of Danvers, Mass., chairman of the Maintenance of Way Employees' Union had refused permission to accept the Quartermasters Corps' offer. The railroad explained this "inability to accept any available help in the present emergency" meant that war freight and passenger service "must wait that much longer to return to normal," adding that once the emergency had passed, prisoners would not have been retained anyway.

The railroad explained that were the present snow allowed to melt and freeze the effect would be "disastrous."

Money for Rivers and Harbors

Appropriations totaling $41,358,000 for rivers and harbors work during the fiscal year ending June 30, 1946, are carried in the War Department Civil Functions Appropriation Bill, H. R. 2126, which was passed by the House on February 13, having been reported favorably from the committee on appropriations the previous day. This amount, the committee's report said, "will be augmented by approximately $10,000,000 from the 1945 appropriations, representing miscellaneous items where manpower, materials, or some other item of expense could not be secured in the current fiscal year."

The current year's appropriations for the rivers and harbors work have totaled $54,124,000. The $41,358,000 carried in the bill for fiscal 1946 includes $3,970,000 for new work, and the remainder for maintenance and operation of existing projects. Largest of the new-work projects would be work on the New York and New Jersey channels, $1,600,000, with the $1,000,000 job on the Mississippi, between the Ohio and the Missouri, the runner-up.

With its report, the committee released the record of last month's hearings on the bill before one of its subcommittees. There Major General E. Reybold, chief of engineers of the Army, pointed out that new rivers and harbors work is being kept to a minimum during the war period. He put into the record a list of projects, estimated to cost a total of $76,563,000, on which remaining construction has been deferred or curtailed.

Another of the general's lists added others to these, thus setting up 69 projects, estimated to cost a total of $169,857,950, "of immediate value to navigation, and on which no substantial delay is expected in the fulfillment of conditions of local cooperation." Largest project on this second list was the Cross-Florida Barge Canal, $53,700,000. Still another list included some 190 "stand-by" projects, estimated to cost a total of $72,178,965, "on which a substantial delay in the fulfillment of the conditions of local cooperation is anticipated," and where "prosecution is not now justified in the interest of commerce and navigation." Meanwhile, the general agreed with Representative Mahon, Democrat of Texas, who predicted that after the war the Army engineers "will undoubtedly ask for a lot more money for the expansion of the program."

Meanwhile General Reybold had presented figures showing the growth of water-borne commerce, expressing his belief that the war job done by the water carriers justified all past expenditures on waterways. "The tremendously vital part which the water transportation system of the United States has played in the successful prosecution of the war," he said, "is a tribute to the wisdom of the Congress in authorizing, over a long period of years, the construction of those river and harbor projects forming the major component parts of that system. We, who daily meet the problems presented by the most stupendous and far-flung military supply program in history, will never say that Congress has been wasteful or extravagant in the development of the water transportation system. On the contrary we have been and still are hard pressed to make it meet our minimum requirements."

Supply Trade

The **Formica Insulation Company**, Cincinnati, Ohio, has been awarded a second star for its Army-Navy "E" pennant for continued production achievement.

Edward C. Fales, assistant to the president of the **American Welding & Manufacturing Co.**, Warren, Ohio, has been elected vice-president of the company.

Roy P. Tooke, of the general engineering staff of the **American Rolling Mill Company**, has been appointed assistant chief engineer of the company's general engineering division.

R. L. Heath, formerly chief metallurgist of the Allison division of the General Motors Corporation at Indianapolis, Ind., has been appointed metallurgical engineer of the **Climax Molybdenum Company**, with headquarters in St. Louis, Mo.

Albert W. Nelson has been appointed assistant manager of sales, New England district, with headquarters in Boston, Mass., for the **American Steel & Wire Co.**, U. S. Steel subsidiary. Mr. Nelson has been associated with the American Steel & Wire Co. since May, 1939, when he was employed in the general sales department. The following December he was transferred to Detroit, Mich., and in November, 1940, appointed a salesman covering western Michigan.

The American Rolling Mill Company has announced several promotions in its sheet and strip sales department. **Murray B. Wilson**, formerly New York district sales manager, has been appointed Dayton, Ohio, district sales manager to succeed **Edson D. Dronberger. W. B. Quail**, formerly New York district manager of the American Rolling Mill Railroad Sales Company, has been appointed to succeed Mr. Wilson as New York district manager of sheet and strip sales. **Mitchell G. Duncan**, who has been connected with the company's St. Louis, Mo., office for the past 12 years, has been transferred to the Detroit, Mich., office as a salesman and **Fred Mayhew**, of the company's home sales office and a former member of the

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TODAY'S FEATS

WILL BE TOMORROW'S STANDARDS

THE wonderful work of America's railroads today in hauling heavy trains at high speeds to meet wartime demands will become standard performance tomorrow.

Railroads that have replaced older motive power with Lima Super-Power Steam Locomotives, not only are better able to meet present-day schedules, but will be prepared for the increasingly exacting traffic requirements of the near future.

LIMA LOCOMOTIVE WORKS INCORPORATED

LIMA LOCOMOTIVE WORKS, INCORPORATED, LIMA, OHIO

St. Louis office, has been appointed to succeed Mr. Duncan at St. Louis. **Robert L. Wells, Jr.,** a salesman in the Minneapolis, Minn., office, has been transferred to the Dallas, Tex., office.

Charles E. Barnes, sales agent of the **Griffin Wheel Company,** Chicago, has

Charles E. Barnes

been promoted to general sales manager and **Edward Q. Sylvester,** sales engineer at Boston, Mass., has been advanced to assistant to the president. Both will have headquarters at Chicago. Mr. Barnes entered the employ of the Griffin Wheel Company in 1937 and from 1939 to 1943 served as sales agent at Kansas City, Mo. In the latter year, he was transferred to the general sales department at Chicago where, until his recent promotion, he has been a sales agent.

Mr. Sylvester entered the employ of the

Edward Q. Sylvester

company in 1940 and since that date has served as sales engineer at Boston.

John N. Thorp, formerly manager of the Construction Equipment division, Chicago Pneumatic Tool Company, New York, has formed his own company, the **John N. Thorp Company,** New York, to handle construction equipment and railway supplies.

OBITUARY

John F. Shanahan, of the New York sales department of the Superheater Company, died January 26. He was 59 years of age. Mr. Shanahan received his railroad training with the motive power department of the Erie. He joined the New York sales and service departments of the Superheater Company in April, 1917.

Gurdon H. Hamilton, vice-president of the **Glidden Company,** died of a heart attack on February 7 while attending a company meeting in Cleveland, Ohio.

Equipment and Supplies

More Diesel Hp. in Class I Road Service Than in Switching

Current estimates of the *Railway Age* indicate that there are now about 2,899 Diesel locomotives in service on domestic railways, of which 2,515 were owned by Class I railways and 384 by terminal and switching companies and Class II and III railways.

Of the number in service on Class I railways, 505 are road locomotives of 1,668,240 aggregate horsepower and 2,010 switching locomotives of 1,610,438 hp. There were 202 5,400-hp. locomotives in service, of which 124 were installed during 1944. In addition, eight 2,700-hp. locomotives were installed last year and 18 2,000-hp. combination passenger and freight locomotives. Due to government restrictions on the building of Diesel locomotives for passenger service, there have been few additions to the number of locomotives in this service in recent years.

The distribution by horsepower of the total number of locomotives in service, as estimated by the *Railway Age,* is presented in the accompanying table.

Total Diesel Locomotives in Service—Class I Railways

Horsepower	Freight Locomotives No.	Freight Locomotives Total H.P.	Passenger and Comb. Pass. & Frt. Locomotives No.	Passenger and Comb. Pass. & Frt. Locomotives Total H.P.	Totals No.	Totals Total
5,400	191	1,031,400	11	59,400	202	1,090,800
4,050	1	4,050	1	4,050	2	8,100
3,600	...	.....	2	7,200	2	7,200
2,700	6	16,200	8	21,600	14	37,800
2,000	...	.....	220	440,000	220	440,000
1,800	...	.....	31	55,800	31	55,800
1,200	...	.....	7	8,400	7	8,400
1,000	9	9,000	7	7,000	16	16,000
600	1	600	...	.....	1	600
380	8	3,040	...	.....	8	3,040
Less than 380	2	500	...	.....	2	500
Total Road Locos.	218	1,064,790	287	603,450	505	1,668,240
Switching Locos.	(Averaging 800 Horsepower per Locomotive)				2,010	1,610,438
Total Rd. & Sw. Locos.					2,515	3,278,678

Note:—384 Diesel locomotives of 268,840 total horsepower are estimated to be in service on switching and terminal companies and on Class II and III railroads.

France to Get 700 Locomotives; Russia 500 More

It has been reported that 700 locomotives of 2-8-2 wheel arrangement have been ordered for shipment to France, of which 260 will be built by the Baldwin Locomotive Works, 260 by the American Locomotive Company and 180 by the Lima Locomotive Works.

Shortages of equipment in France are severe, according to a report on the country by the Office of War Information. Of 11,900 locomotives there before the war, only 5,100 are said to be serviceable now, with one thousand more under repair. Of the total, the report said 4,400 can be used for the civilian economy, if the rails can be cleared of military freight to allow it. There were 700 locomotives listed in shipments of civilian supplies to France during January.

For military use, the United States also was reported to have shipped 1,150 locomotives into the country, with 631 more in England and the United States awaiting shipment. There have been landed 13,600 freight cars and 7,000 more are assembled in England for transshipment. In the United States, 30,200 freight cars have been disassembled for shipment, and are being transported abroad.

Orders for 500 locomotives and 1,165 freight cars are reported to have been placed for shipment to Russia. The locomotives, of 2-10-0 wheel arrangement, are reported to have been allocated 250 to the Baldwin Locomotives Works and 250 to the American Locomotive Company, and the freight cars as follows: 265 50-ton tank cars to the American Car & Foundry Co.; 400 tank cars to the General American Transportation Corporation and 500 40-ton dump cars to the Magor Car Corporation.

Since January, 1944, this country has been supplying railroad equipment to Russia under lend-lease, and through November, 1944, had supplied under the lend-lease program 1,045 railroad locomotives, 7,164 flat cars, 1,000 dump cars, and 100 tank cars. The movement of this type of equipment reached its peak in November, 1944, when 1,367 freight cars were shipped.

The problem of rail replacements was also reported as a major task of lend-lease. Through November, 1944, 478,000 tons of rails and 110,000 tons of wheels and axles were sent to the Soviets. Under lend-lease, we also sent 60 power trains, consisting of complete steam generating units mounted on railroad freight cars, between August and November 30, 1944.

LOCOMOTIVES

The BRAZIL MINISTRY OF TRANSPORT AND PUBLIC WORKS, which was reported in the annual statistical issue of the *Railway Age* as having ordered seven 4-8-4 type steam freight locomotives in October, 1944, from

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the Baldwin Locomotive Works, has increased its order to ten locomotives of this type.

FREIGHT CARS

The COLORADO & WYOMING has ordered 50 mill-type gondola cars from the Mount-Vernon Car Manufacturing Company.

Construction

SPOKANE, PORTLAND & SEATTLE.—This road has awarded a contract, amounting to $23,000, to E. F. Balgemann, Portland, Ore., for the construction of a one-story brick yard office building at Portland. Another contract, amounting to $30,000, has been awarded to the Natt McDougall Company, Portland, for the installation of a Fairbanks-Morse Type "S" 75-ton section, four-section railroad track scale at Bend, Ore. The road will also install a C. T. C. type interlocking plant at Willbridge Junction, near Portland, at a cost of $22,000, and will string a copper telephone circuit between Wishram, Wash., and Bend, a distance of 151 miles, at a cost of $24,000.

Financial

ATCHISON, TOPEKA & SANTA FE.—*Long Beach Extension.*—In a proposed report Examiner Ralph R. Molster has recommended that the Interstate Commerce Commission deny "at this time" this company's application for authority to construct a 2.02-mile extension from the Wilmington section of Los Angeles, Cal., to a point on municipal trackage in the city of Long Beach. The proposal was supported by the city of Long Beach and commercial organizations located there and also by the state railroad commission. It was opposed by the Southern Pacific, Pacific Electric and Union Pacific, which roads serve Long Beach.

The function of the proposed new line, which with necessary facilities would cost about $537,330, would be to enable the Santa Fe to operate over the Long Beach municipal tracks and so to reach piers, docks and industries on that city's waterfront directly rather than through interchange with other carriers. The examiner reviewed the record for and against the proposal first from the viewpoint of immediate military requirements and second from the viewpoint of public benefit in promoting development of the port after the war ends.

The ports of Long Beach and Los Angeles are adjacent, the report notes, and are embraced in the Los Angeles Port of Embarkation, to which all war shipments are consigned. The entire harbor area has a capacity of about 20,000 carloads of freight monthly. It is expected that the volume of military freight will increase substantially in the near future, and it will be desirable to be able to move it to any part of the port, including the Long Beach area, from government hold yards by the most direct route. The proposed new line, the examiner suggested, would "best be fitted for these purposes if sufficient facilities were not already in existence and available."

In particular, the examiner concluded that operation by the Santa Fe over an adjacent Southern Pacific branch under trackage rights, together with performance of switching service for it, as for other roads by the Pacific Electric, would be "for the present" the "most efficient, economical and convenient" arrangement, but he noted that the carriers did not share this conclusion. "In view of the existing state of war, and of the apparent intransigence of the carriers despite this threat to national security," he said, "the commission should sentations are made herein by the port of indicate that, if and when appropriate repre-embarkation authorities, it will issue, on its own motion, a certificate authorizing nection to the Southern Pacific's line, "and the construction" by the Santa Fe of a con-will issue such service order or orders as may appear proper and efficacious in the premises."

Turning to the post-war aspect of the proposal, the examiner recommended that the commission defer consideration of the project until further proceedings have been had in connection with the arrangement to unify the railroad facilities in the Los Angeles harbor area made effective by commission authority June 1, 1929. "Despite many specious considerations urged in support of direct access by the applicant to the city and port of Long Beach," said the report, "construction of the proposed extension under color of the needs of a temporary emergency would foreclose consideration . . . from the standpoint of normal peacetime conditions."

Remarking that "the hopes and fears of Long Beach must yield, in some measure, to the general welfare," the examiner observed that "the attention of the carriers serving the Los Angeles-Long Beach harbor area ought to be directed promptly to arranging for unified operation in this area in their common interest, and the interest of the public, in order that the advantage of full competition on equal terms and the benefits of efficient and economical terminal operation in the entire area may be realized.

"The applicant's situation with respect to Long Beach seems to have resulted from failure to discern clearly the course of port development in southern California at times when it might have built into that section of the area without let or hindrance," he added. "For this neither the public nor the applicant ought to be penalized permanently."

ATLANTIC COAST LINE.—*Asks Tenders.*—The Atlantic Coast Line of Connecticut has invited tenders until February 28 from holders of its $3,716,000 of 5 per cent certificates of indebtedness.

BALTIMORE & OHIO.—*Equipment Trust.*—The Baltimore & Ohio has requested bids on $4,575,000 of 15-year equipment trust certificates, series N, to be issued under a proposed agreement and lease of railroad equipment (Philadelphia Plan), dated March 1, 1945, subject to the approval of the Interstate Commerce Commission. Proceeds will be used to finance not more than 80 per cent of the net cost of five 2-8-8-4 type freight locomotives to be built by the Baldwin Locomotive Works at a cost of $272,408 each; 1,000 50-ton steel hopper cars by the Bethlehem Steel Company, at $2,730 each; and 500 50-ton steel box cars by the General American Transportation Corporation at $3,279 each, deliveries of which are expected during the second quarter of 1945.

CENTRAL OF NEW JERSEY.—*Tax Dispute Returned to Federal Court.*—On February 8, the United States circuit court of appeals at Philadelphia, Pa., refused the State of New Jersey's application for a stay in federal proceedings. Special Master A. C. Studer, appointed by the U. S. district court at Newark, N. J., had held that the federal bankruptcy court is the proper tribunal to determine the amount and validity of the state's tax claims, which view is opposed by the state.

CHICAGO & NORTH WESTERN.—*Payment of R. F. C. Debt.*—Directions of the Chicago & North Western on February 8, voted to pay off the railroad's indebtedness of $6,224,000 to the Reconstruction Finance Corporation on July 1. Directors also discussed the possible refinancing of the company's $47,980,000 first mortgage and $6,500,000 divisional mortgage but deferred final action. The board approved a $62,640,000 maintenance and improvement program for 1945.

DENVER UNION TERMINAL.—*Retirement of Bonds.*—Division 4 of the Interstate Commerce Commission has found itself without jurisdiction in the proceeding, and therefore has dismissed the application of the six proprietary companies controlling this terminal company for authority to retire $4,000,000 of its bonds held by the Union Pacific. (Previous item in *Railway Age* of January 27, page 253.)

LOUISIANA & ARKANSAS.—*R. F. C. Sale of Securities.*—Sale to F. S. Moseley & Co. of New York of $1,050,000 of this road's 3 per cent equipment trust certificates of 1940 has been announced by the Reconstruction Finance Corporation. The price, 104.71, represented a $49,448 premium to the R. F. C.

NEW YORK CENTRAL.—*Notes.*—Division 4 of the Interstate Commerce Commission has authorized this company to issue $1,142,080 of series A, and $212,160 of series B, promissory notes, in evidence, but not in payment, of the unpaid portion of the purchase price of the following equipment, being obtained under conditional sale agreements: from the American Locomotive Company, 7 1,000-hp. and 12 660-hp. Diesel-electric switching locomotives; and from the Baldwin Locomotive Works, 3 1,000-hp. Diesel-electric switching locomotives. (Previous item in *Railway Age* of January 27, page 253).

PENNSYLVANIA.—*Awards Equipment Trust.*—On February 8, the Pennsylvania awarded its $6,000,000 issue of 2 per cent

News Department continued on next left-hand page

Photograph Courtesy of
Chesapeake & Ohio Railway Co.

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● For 36 years you have been using Security Sectional Arches to save fuel.

Today that function is more important than ever before.

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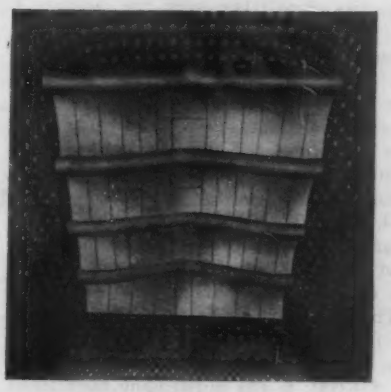

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equipment trust certificates, series P, due in one to 15 years, to Harris, Hall & Co. and associates on a bid of 100.1799—a net annual interest cost to the railroad of 1.97 per cent. The certificates were reoffered at prices to yield 0.80 to 2.15 per cent, according to maturity. The interest rate was reported the lowest to have been received by any railroad on 15-year certificates. (Previous item in *Railway Age* of February 10, page 323.)

PERE MARQUETTE.—*Requests Bids on New Bonds.*—The Pere Marquette has invited bids until February 19 for the purchase of $50,000,000 of first mortgage bonds, series D, to be dated March 1, 1945, and mature March 1, 1980. Proceeds, together with other funds, will be used to redeem all outstanding first mortgage 5 per cent bonds, series A, and 4 per cent bonds, series B, due 1956, and first mortgage 4½ per cent bonds, series C, due 1980. No bid for less than 98½ will be considered.

TOLEDO, PEORIA & WESTERN.—*Notes.*—Division 4 of the Interstate Commerce Commission has authorized this company to issue $100,000 of series A 3 per cent notes to mature not later than June 1, 1949. The application for this authority was filed June 24, 1944, by George P. McNear, Jr., president of the company, who controls it through ownership of a majority of the stock of the Railroad Securities Corporation, which in turn owns all of the road's stock except directors' shares. Following this application there was extensive correspondence between Mr. McNear and the commission's Bureau of Finance to develop the company's financial situation, particularly after an adverse proposed report was filed by Examiner H. C. Howard, as noted in *Railway Age* of July 29, 1944, page 220.

The application resulted from seizure of the company's properties by the federal government March 22, 1942, since which time they have been operated by the Office of Defense Transportation. When the properties were taken over, the company's cash working capital and other assets were included, the report noted, leaving it without funds. "Although some advances have been made and part of the working cash returned" by the O. D. T., and bank loans have been obtained, the company sought additional cash for working capital. As noted in *Railway Age* of December 30, 1944, page 1009, the O. D. T. subsequently arranged to advance $5,000 per month to meet corporate obligations, but not to meet the executive payroll.

The company's application stated its need for funds as follows: To meet bills for the year ended November 30, 1944, plus interest, $18,600; to pay outstanding bank loans and interest, $36,200; interest on the notes, $12,000; reserve for contingencies, $18,000; for operations in the current year, $15,200; thus omitting specific provision for executives' salaries. The division pointed out that "funds available to the applicant are not sufficient to provide for its current requirements and interest upon the notes. To meet this condition the applicant has included as an obligation to be met by a part of the proceeds of its notes a sum sufficient to pay all the interest thereon from date of issue to final maturity. While the applicant is unable to pay the interest charges from current earnings, it states that it has a claim against the United States government resulting from the seizure of its property as aforesaid, which when finally adjudicated will be more than sufficient to pay all the requirements of the proposed notes."

Commissioner Porter, who normally participates in Division 4 decisions, was replaced by Chairman Rogers in the disposition of this case.

WABASH.—*Refinancing.*—Division 4 of the Interstate Commerce Commission has authorized this company to issue $47,000,000 of 3¼ per cent series B first mortgage bonds, due in 1971, the proceeds, with other funds, to be employed for the redemption of $47,354,300 of series A 4 per cent first mortgage bonds. Sale of the new issue at 98.38 to Halsey, Stuart & Company and others was noted in this column in the issue of February 10. The division noted that this road, since its reorganization became effective on January 1, 1942, had accomplished a net debt reduction of $21,880,450, and observed that "applicant will be expected to continue its debt reduction program when bonds are available at reasonable prices." The refinancing is expected to result in a net saving of $10,042,991 .

YOSEMITE VALLEY.—*Offer to Purchase.*—Holders of the $2,318,000 par value of outstanding first mortgage bonds of this company (in bankruptcy) have been offered $280 for each $1,000 bond by Adolf Friedeberg, president of the Machine Tool & Equipment Corp. (New York)—the offer being contingent upon its acceptance prior to February 21 by holders of 70 per cent of the bonds. These mortgage bonds also control the outstanding stock of the company, on a pro rata basis, and the offer of purchase of the bonds contemplates that a proportionate ratio of stock will be turned over to the purchaser along with the bonds.

Average Prices Stocks and Bonds

	Feb. 13	Last week	Last year
Average price of 20 representative railway stocks..	49.69	48.85	39.67
Average price of 20 representative railway bonds..	94.39	94.15	86.34

Dividends Declared

Alabama & Vicksburg.—guaranteed, $3.00, semi-annually, payable April 1 to holders of record March 8.

Bangor & Aroostook.—5% preferred, accum., $1.25 payable April 1 to holders of record March 6.

Pemigewasset Valley. — $1.50, semi-annually, payable February 1 to holders of record February 1.

Vicksburg, Shreveport & Pacific.—$2.50, semi-annually, payable April 1 to holders of record March 8.

Abandonments

CHICAGO, ROCK ISLAND & PACIFIC.—Upon consideration of a petition filed by the Railway Labor Executives Association, Division 4 of the Interstate Commerce Commission has extended for a further period of 2 years its reservation of jurisdiction with respect to the protection of employees who may be adversely affected by the line abandonment authorized in the Finance Docket No. 13928 proceeding.

PERE MARQUETTE.—Upon consideration of petitions filed by the Railway Labor Executives Association, Division 4 of the Interstate Commerce Commission has extended for a further period of 2 years its reservation of jurisdiction with respect to the protection of employees who may be adversely affected by the line abandonments authorized in the Finance Docket Nos. 13937 and 14006 proceedings.

Railway Officers

EXECUTIVE

G. M. Cornell, whose appointment as assistant to the president of the Virginian with headquarters at Norfolk, Va., was announced in the *Railway Age* of January 6, was born at Chicago on March 7, 1905, and received his B. S. from the University of Minnesota in 1925 and his M. S. from

G. M. Cornell

the graduate school of Yale University in 1928. He entered railroading with the Minneapolis, St. Paul & Sault Ste. Marie at Minneapolis, Minn., in July, 1925, and served subsequently with the Northern Pacific at St. Paul, Minn., from December, 1925, to September, 1927. Mr. Cornell joined the Chesapeake & Ohio in May, 1929, and held various positions at Richmond, Va., and Huntington, W. Va., until October, 1941, when he received a leave of absence to serve with the War Production Board. He became assistant director and deputy director of the Transportation Equipment division (W. P. B.) in April, 1942, and served as director of that division from December, 1944, to January, 1945, when he was appointed assistant to the president of the Virginian.

Benjamin F. Davis, whose appointment as assistant to the chief executive officer of the Jersey Central Lines with headquarters at Jersey City, N. J., was announced in the *Railway Age* of January 13, was born at Tompkinsville, N. Y., on February 4, 1904,

News Department continued on next left-hand page

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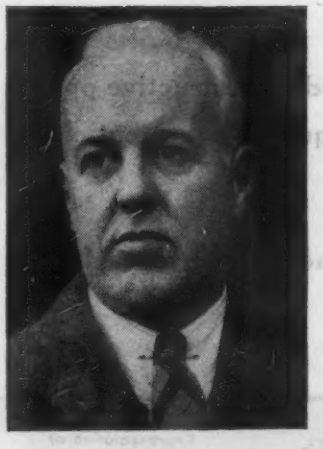
and entered railroad service in October, 1919, as an office boy in the New York offices of the Baltimore & Ohio. After serving in various positions, including clerk in the freight traffic department and secretary to the general traffic agent, he became secretary to the then general manager, Roy B. White (now president of the Baltimore & Ohio) in August, 1923, and continued as Mr. White's secretary when Mr. White became senior vice-president of the Jersey Central in January, 1926. Mr. Davis transferred to the operating department of the Jersey Central as a checker in the Jersey City freight yard in March, 1927, and thereafter held various positions until October, 1944, when he was promoted to assistant superintendent of the Central division, the position he held at the time of his recent advancement to assistant to the chief executive officer.

Benjamin F. Davis

Philip M. Parker, whose appointment as assistant to the chief executive officer of the Jersey Central Lines at Jersey City, N. J., was announced in the *Railway Age* of January 13, was born at Bayonne, N. J., on August 25, 1898, and after seeing overseas service with the United States Army, was graduated from Princeton University in 1920 as a member of the class of 1919. Subsequently he served as an electrical engineer of All America Cables, Inc., and the International Telegraph & Telephone Co., and with the management division of R. H. Macy & Co. until 1940, when he joined the Jersey Central as a member of the staff of the trustees. He transferred to the staff of the chief executive officer in 1943, remaining there until his recent promotion to assistant to the chief executive officer.

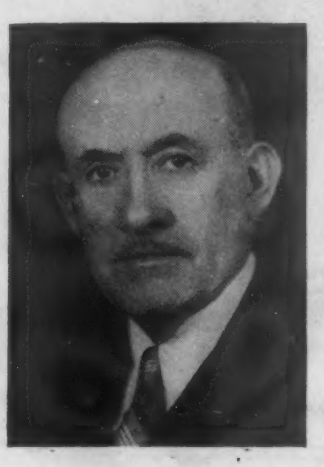


Philip M. Parker

E. P. Flintoft, K. C., vice-president and general counsel of the Canadian Pacific at Montreal, Que., has retired after more than 36 years of service, and **G. A. Walker, K. C.,** general solicitor there, has been appointed to succeed him.

FINANCIAL, LEGAL AND ACCOUNTING

George T. Scott, assistant comptroller of the Chicago Great Western at Chicago, has been promoted to comptroller, with the same headquarters, succeeding **Ralph S. Stephenson,** whose resignation was reported in the *Railway Age* of February 10. Mr. Scott was born at Creston, Iowa, on November 19, 1882, and entered railway service in June, 1904, as a telegrapher of the Great Western. He subsequently held various other positions with that road, including station agent, traveling auditor, station accountant, and chief clerk to the comptroller. On September 1, 1942, Mr. Scott was promoted to the position he held at the time of his new appointment.



George T. Scott

L. W. Albertson, C. D. Phillips and **E. C. Michelson** have been appointed assistant comptroller, auditor of disbursements and auditor of revenue accounts, respectively, of the Spokane, Portland & Seattle, all with headquarters at Portland, Ore.

F. C. S. Evans, assistant general solicitor of the Canadian Pacific at Montreal, Que., has been appointed general solicitor with the same headquarters, succeeding **G. A. Walker, K. C.,** whose promotion to vice-president and general counsel is announced elsewhere in these columns. **D. I. McNeill, K. C.,** assistant general solicitor at Winnipeg, Man., has been appointed assistant general counsel at Montreal.

R. R. Richards, auditor of disbursements of the New York Central with headquarters at New York, has been appointed general auditor there, with jurisdiction over freight, passenger, disbursements, capital expenditure and station accounting. **J. J. Fay, Jr.,** has been named assistant to comptroller at New York, and **R. D. Murray** has been appointed assistant to general auditor there. **J. B. Taylor** has been named auditor of disbursements at Detroit, Mich., and **V. L. Nelson** assistant auditor of disbursements there. **W. H. LeValley,** auditor, station accounts and overcharge claims, at New York, has been appointed assistant auditor of freight accounts at Detroit, and **W. F. Brownell** has been named auditor, station accounts and overcharge claims, at New York, succeeding him. **C. W. Kingsley** and **E. E. Peterson** have been appointed auditor of capital expenditures and assistant auditor of capital expenditures, respectively, both with headquarters at New York.

Following the retirement of **Henry C. Pribble** as general claim agent of the Atchison, Topeka & Santa Fe, as reported in the *Railway Age* of February 10, the claim department of this road at Topeka, Kan., has been separated into departments of freight claims and general claims and the following promotions have been announced: **C. D. Hart,** formerly assistant general claim agent, becomes general freight claim agent. **Robert M. Clark,** solicitor for Kansas, promoted to general claims attorney, with system jurisdiction over claims for personal injury, fire, stock and miscellaneous causes. **I. Barnum,** chief clerk of the claim department, advanced to freight claim agent of eastern and western lines, with headquarters as before at Topeka. **F. A. Rankin,** a member of the Topeka claim office, promoted to assistant freight claim agent at Chicago. **W. E. Goodnow,** assistant general claim agent, advanced to general claim agent at Topeka. **J. S. Hamilton,** chief adjuster, promoted to assistant general claim agent at Topeka. **C. J. Putt** has been appointed solicitor for Kansas at Topeka, succeeding Mr. Clark.

OPERATING

W. S. Moore, division engineer of the Louisville & Nashville at Louisville, Ky., has been appointed acting division superintendent, with the same headquarters.

J. W. Stewart, chief clerk in the office of the general superintendent of the Canadian Pacific at Montreal, Que., has been advanced to assistant superintendent of the Trenton division at Toronto, Ont.

S. T. W. Green, superintendent of the Lehigh & New England at Bethlehem, Pa., has been appointed general superintendent with the same headquarters, and his former position of superintendent has been abolished.

Ernest H. Hallmann, whose promotion to superintendent of the Springfield division of the Illinois Central, with headquarters at Clinton, Ill., was reported in the *Railway Age* of January 27, was born at Emden, Ill., on January 1, 1906, and received his higher education at the Illinois Wesleyan University, Bloomington, Ill. He entered railway service in September,

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1926, as a clerk in the auditor's office of the I. C., subsequently serving in various other departments in a similar capacity until March, 1936, when he was advanced

Ernest H. Hallmann

to assistant chief clerk in the office of the general superintendent at Chicago. On February 1, 1938, Mr. Hallmann was promoted to night yardmaster, with headquarters at Bluford, Ill., and in December of the following year he was further advanced to trainmaster at Clinton, Ill. On April 1, 1944, he was transferred to Waterloo, Iowa, remaining in that location until his new appointment.

Charles F. Duggan, whose promotion to assistant general manager of the Illinois Central, with headquarters at Chicago, was reported in the *Railway Age* of January 27, was born at Ryan, Iowa, on August 15, 1895, and attended the Cedar Rapids Business College in 1915. He entered railway service on March 8, 1916, as a stenographer in the division accountant's office of the Illinois Central at Dubuque, Iowa, and on October 1, 1918, he was promoted to chief accountant of the Illinois division at Champaign, Ill. On February 15, 1920, he was advanced to chief clerk to the superin-

Charles F. Duggan

tendent at Champaign, and on September 1 of the same year he was promoted to chief clerk to the general superintendent, Northern lines, at Chicago. Mr. Duggan was advanced to trainmaster at Carbondale, Ill., on March 1, 1929, and later served in that capacity, with the exception of several months in 1936, when he was assigned special work for the vice-president and general manager, at Clinton, Iowa, Chicago and Champaign. In March, 1940, he was promoted to superintendent of the Iowa division, with headquarters at Waterloo, Iowa, the position he held at the time of his new appointment.

J. A. Dussault, assistant superintendent of the Canadian Pacific's Montreal (Que.) Terminals, has been named assistant superintendent at Three Rivers, Que., and **J. W. Harman,** assistant superintendent of the Laurentian division, has replaced him at Montreal.

T. G. Hawkins, assistant superintendent, sleeping, dining and parlor car department, of the Canadian Pacific at Montreal, Que., has been named superintendent of that department with the same headquarters, succeeding **F. M. Breen,** who has retired after 32 years of service.

Jose I. Garcia, assistant general superintendent of the National Railways of Mexico at Mexico City, D. F., has been appointed acting general superintendent with the same headquarters, succeeding **Pedro G. Pantjoa,** who has been appointed superintendent of Sureste division, with headquarters at Tierra Blanca, Vera Cruz. **Manuel Chavero,** superintendent of the Cardenas division, has been transferred to the Golfo division, with headquarters at Monterrey, B. L., succeeding **Francisco de la Torre,** who has been appointed assistant superintendent of the Sureste division. **Abel Prince,** superintendent of the Sureste division has been transferred to the Cardenas division, with headquarters at San Luis Potosi, S. L. P., relieving Mr. Chavero.

TRAFFIC

E. A. Ewald has been appointed a general agent of the Alton & Southern, with headquarters at St. Louis, Mo.

L. A. Wirgler has been appointed a general agent of the Union Pacific, with headquarters at Pasadena, Cal.

Richard Mercer, general agent of the New York Central at New Orleans, La., has been advanced to district passenger agent, with headquarters at St. Louis, Mo. **Russell T. Martin,** passenger representative, with headquarters at San Antonio, Tex., has been promoted to general agent at New Orleans, succeeding Mr. Mercer.

Ernest J. Carr, whose appointment as general eastern traffic manager of the Illinois Central at New York was announced in the *Railway Age* of February 3, was born at Chicago on July 9, 1896, and entered railroading with the Illinois Central as a messenger in June, 1912. After serving as stenographer and accountant, and as secretary to the general manager, vice-president, president, and chairman of the board, successively, he became chief clerk and office manager to the vice-president, traffic, on December 1, 1931, and was named general traffic agent at Omaha, Neb., in February, 1936. In September, 1937, he was transferred to Birmingham, Ala., remaining there until May, 1939, when he was promoted to assistant traffic manager at St. Louis, Mo., the position he held at the

Ernest J. Carr

time of his recent appointment as general eastern traffic manager.

J. F. Rivers, division freight agent of the Seaboard Air Line at Jacksonville, Fla., has been appointed assistant general freight agent at Charlotte, N. C., succeeding W. P. Hickey, whose promotion to assistant freight traffic manager at Savannah, Ga., was announced in the *Railway Age* of February 10.

Charles H. Campbell, whose promotion to assistant traffic manager of the Illinois Central, with headquarters at St. Louis, Mo., was reported in the *Railway Age* of February 3, was born at Cincinnati, Ohio, on October 1, 1895, and attended the University of Cincinnati. He entered railway service in April, 1911, as a clerk in the general passenger office of the Baltimore & Ohio at Cincinnati, and in 1915 he went with the Cleveland, Cincinnati, Chicago & St. Louis as traveling passenger agent. He served in the armed forces during World War I, returning to the Big Four in 1918 as traveling passenger agent at Cincinnati. Later he was transferred to

Charles H. Campbell

Cleveland, Ohio, and Indianapolis, Ind. In May, 1921, Mr. Campbell entered the service of the I. C., as a passenger agent, with headquarters at Cincinnati, becoming city

News Department continued on next left-hand page

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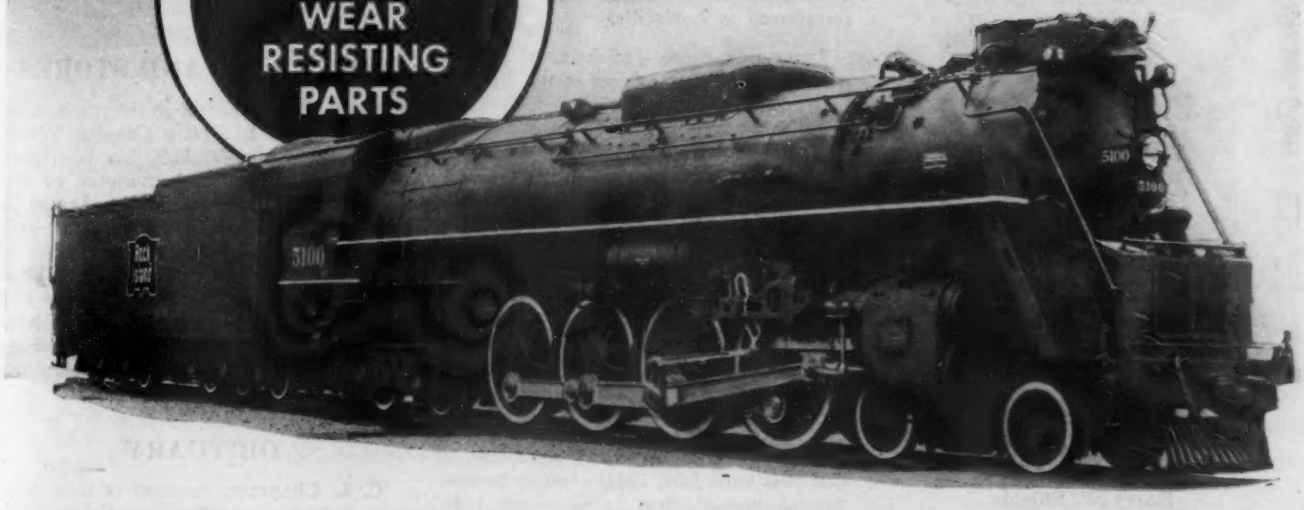

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Valve Bushings
Valve Packing Rings
Valve Bull Rings
Crosshead Shoes
Hub Liners
Shoes and Wedges
Floating Rod Bushings
Finished Parts
Dunbar Sectional Type Packing
Duplex Sectional Type Packing
for Cylinders and Valves
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Sectional Packing)
Cylinder Snap Rings
Valve Rings, All Shapes
Light Weight Valves
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freight and passenger agent at Evansville, Ind., three years later. He subsequently served as traveling freight agent and commercial agent until July, 1942, when he was promoted to general agent, with headquarters at Peoria, Ill. In February, 1943, he was advanced to general traffic agent at Louisville, Ky., the position he held at the time of his new appointment.

Harry W. Shields, whose promotion to general passenger agent of the Spokane, Portland & Seattle, with headquarters at Portland, Ore., was reported in the *Railway Age* of January 27, was born at Indiana, Pa., on May 31, 1891. In 1911 he became a freight brakeman of the New York Central at Cleveland, Ohio, and three years later he went with the Northern Pacific as a general clerk, with headquarters at Pendleton, Ore. In March, 1918, Mr. Shields was appointed city freight and

Harry W. Shields

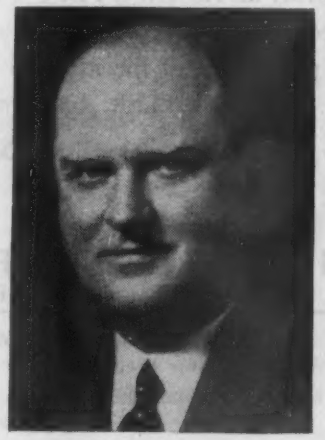
passenger agent of the S. P. & S., at Astoria, Ore., later serving in a number of other capacities at various points until 1929 when he was promoted to general agent, with headquarters at San Francisco, Cal. On August 1, 1943, Mr. Shields was advanced to assistant to the general freight and passenger agent at Portland, and in September of the same year he was promoted to assistant general passenger agent, the position he held at the time of his new appointment.

ENGINEERING & SIGNALING

Harold C. Tunison has been appointed assistant engineer, maintenance of way, of the Lehigh & New England at Bethlehem, Pa. The position of assistant to engineer, maintenance of way, has been abolished.

Charles K. Bruce, associate bridge engineer of the Louisville & Nashville at Louisville, Ky., has been promoted to bridge engineer, with the same headquarters, succeeding **J. McClure Salmon,** whose death on January 30 is reported elsewhere in these columns. **John C. Nichols,** assistant bridge engineer, has been advanced to associate bridge engineer, with headquarters as before at Louisville, replacing Mr. Bruce, and **John U. Estes,** division engineer at Ravenna, Ky., has been promoted to assistant bridge engineer, relieving Mr. Nichols. **I. W. Newman,** assistant division engineer at Latonia, Ky., has been promoted to division engineer, with headquarters at Ravenna, succeeding Mr. Estes. **R. C. Young,** assistant division engineer at Louisville, has been appointed acting division engineer with the same headquarters, succeeding to the duties of **W. C. Moore,** whose appointment as acting division superintendent at Louisville is reported elsewhere in these columns. **Phillip E. Eastes,** assistant supervisor of bridges and buildings at Louisville, has been promoted to assistant bridge engineer, with the same headquarters, succeeding **Walter B. Kuersteiner,** who has been appointed assistant bridge engineer in the office of the chief engineer, also at Louisville, a newly-created position. **W. Tansil Dudley,** draftsman at Louisville, has been advanced to assistant engineer, with headquarters at Knoxville, Tenn., relieving **Frederick H. Boulton,** who has been transferred to Louisville.

Lawrence Sugg Jeffords, whose appointment as chief engineer of the Atlantic Coast Line and the Charleston & Western Carolina at Wilmington, N. C., was announced in the *Railway Age* of February 3, was born at Florence, S. C., on July 2, 1892, and entered railroad service in March, 1910, in the engineering department of the Atlantic Coast Line. Subsequently he held various positions including rodman, concrete inspector, levelman, transitman, resident engineer, assistant division engineer, roadmaster, and assistant engineer, maintenance of way, until January, 1921, when he was promoted to engineer, maintenance of way, of the Charleston & Western Carolina. In January, 1925, he was named superintendent of that road, remaining in that post until July, 1940, when he became general superintendent. In September, 1944,



Lawrence S. Jeffords

he was appointed chief of personnel of the Atlantic Coast Line and the Charleston & Western Carolina, the position he held at the time of his recent promotion to chief engineer of both roads.

MECHANICAL

D. S. Neuhart, whose promotion to assistant general superintendent of motive power and machinery of the Union Pacific, with headquarters at Omaha, Neb., was reported in the *Railway Age* of February 10, entered railway service in June, 1918, as a coach cleaner of the U. P., later holding other minor positions until 1921 when he left the company. Two years later he returned as a machinist apprentice at Salt Lake City, Utah, subsequently holding several positions at various points of the road including Pocatello, Idaho; Lima, Mont., Cheyenne, Wyo., and Kansas City, Mo. In February, 1937, Mr. Neuhart was promoted to superintendent of shops, with headquarters at Los Angeles, Cal., and in April, 1940, he became master mechanic at Kansas City. In November, 1941, he was advanced to assistant to the vice-president in charge of research and mechanical standards, with headquarters at Omaha. For a short time he served as master mechanic at Los Angeles, and in August, 1942, he was promoted to superintendent of motive power and machinery, with headquarters at Omaha, the position he held at the time of his new appointment.

PURCHASES AND STORES

M. K. Hill, assistant to the manager of the Baltimore & Ohio's Camden Warehouses at Baltimore, Md., has been promoted to manager and treasurer of the Camden Warehouses, succeeding **James C. Brown,** who has retired. Mr. Hill, who was born at Baltimore on November 2, 1892, has been with the Baltimore & Ohio since 1942, and previous to that time had served as office manager of the Federal Land Bank of Baltimore and personnel officer of the Farm Credit Administration, successively.

OBITUARY

C. L. Chapman, manager of mail, baggage and express traffic of the Erie at New York, died on February 7 at the Jersey City (N. J.) Medical Center.

J. McClure Salmon, bridge engineer of the Louisville & Nashville at Louisville, Ky., died in a hospital in that city on January 30.

Kenneth A. Cook, general agent of the Canadian Pacific, with headquarters at Chicago, died in a hospital in that city on February 5 following a brief illness.

Thomas C. Powell, who retired in 1931 as chairman of the board of the Chicago & Eastern Illinois, with headquarters at Chicago, died in a New Orleans (La.) hospital on February 9.

Charles S. Knapp, engineer of valuation of the Pullman Company, whose death on January 30, was reported in the *Railway Age* of February 10, was a graduate of the Washington University of St. Louis, Mo., and entered railway service in 1898 as a draftsman of the Pullman Company at Chicago. He left the company in 1901 and returned two years later as a mechanical inspector. In 1905 Mr. Knapp was promoted to assistant mechanical superintendent, with headquarters at Chicago, and in 1914 he was advanced to engineer of tests. In 1916 he was promoted to assistant chief engineer and on January 1, 1921, he was advanced to the position he held at the time of his death.

Table of Freight Operating Statistics appears on second left-hand page

Now is the Time to *Streamline* Inventories

We can help you . . . this simple, easy way

When the war in Europe has been brought to a successful conclusion, a number of things will occur to vitally affect railway operations. A shift in traffic from east to west is one. Easing of the manpower situation is another. And more war contract cancellations and cut-backs on industry are sure to follow V-E day.

Operating as they have been under abnormal conditions, the railways, as a protective measure, have built up large and in some cases excessive supplies in order to keep every possible piece of rolling stock on the move. Their record of war-time freight and troop carrying service is an outstanding one but now—though the last battle remains to be fought—it's time to cut inventories. For with the cessation of hostilities, surplus stocks may become frozen assets. Certain materials now usable may become obsolete. And in the competitive period following the war, the railways must be free of every hindrance to economical operation.

Before protective stocks of steel may be safely reduced there must be some assurance of dependable service when quick shipments of steel are needed. We believe that we can now give the railways such assurance, for Ryerson steel stocks are again large and diversified. They have more than doubled within the past two years. The range of sizes and kinds of bars, plates, shapes, sheets, tubing and other steel products in the eleven Ryerson steel-service plants permits immediate delivery to the railroads for current as well as emergency requirements.

We urge you to make use of Ryerson stocks and facilities. Draw on the nearest plant for everything from carbon bars to alloys and stainless steel. You can ease the burden of heavy inventories by letting Ryerson carry the load while you trim your sails for the competitive days ahead.

RYERSON STEEL-SERVICE

Joseph T. Ryerson & Son, Inc. Plants: Chicago, Milwaukee, Detroit, St. Louis Cincinnati, Cleveland, Pittsburgh, Buffalo, Philadelphia, New York, Boston

"UNION" ITC

INDUCTIVE TRAIN COMMUNICATION

on the Pennsylvania

1940: Columbus, Ohio. One-way equipment in hump yard.

1942: Indianapolis, Ind. One-way equipment in hump yard.

Trenton, N.J. to Phillipsburg. Two-way equipment for road service on Belvidere branch.

1943: Altoona, Pa. One-way equipment in two hump yards.

Harrisburg, Pa. (Enola Yards). One-way equipment in two hump yards.

Pitcairn, Pa. One-way equipment in hump yard.

1944: Pittsburgh, Pa. (Strip District). Two-way equipment in an industrial switching district.

1945: Pittsburgh, Pa. to Harrisburg. Under construction.

For main-line service

THE PENNSYLVANIA CHOOSES "UNION" I.T.C.

Train Communication equipment is now under construction on two of the busiest divisions of the Pennsylvania Railroad between Harrisburg and Pittsburgh.

The "Union" Inductive system has been chosen because the Pennsylvania knows *from its own experience* that "Union" I.T.C. meets railroad needs. "Union" I.T.C. was installed in the Columbus, Ohio yard of the Pennsylvania in 1940; today this system is in use in eight of the Pennsylvania's busiest yards.

For nearly three years, "Union" I.T.C. has been in road service between Phillipsburg and Trenton, on the Belvidere branch.

This record of satisfactory performance made "Union" I.T.C. the inevitable choice when the Pennsylvania decided to use Train Communication in main-line service. Two-way equipment will be installed on approximately 275 freight and passenger locomotives, 90 cabin cars and 6 towers. This will serve two four-track divisions totaling 245 road miles.

Recently, train communication and its relation to railroad operation were discussed at the New York Railroad Club. We will be glad to send you a reprint of the proceedings.

UNION SWITCH & SIGNAL COMPANY

SWISSVALE, PA.

NEW YORK CHICAGO ST. LOUIS SAN FRANCISCO

Freight Operating Statistics of Large Steam Railways—Selected

Region, road and year		Miles of road operated	Train-miles	Locomotive-miles: Principal and helper	Locomotive-miles: Light	Car-miles: Loaded (*thousands*)	Car-miles: Per cent loaded	Ton-miles (*thousands*): Gross excl. locos. & tenders	Ton-miles (*thousands*): Net-rev. and non-rev.	Road locos. on line: Serviceable: Unstored	Road locos. on line: Serviceable: Stored	Road locos. on line: B. O.	Road locos. on line: Per cent B. O.
New England Region:													
Boston & Albany	1944	362	180,462	209,120	34,786	4,499	61.9	297,226	122,173	72	..	21	22.6
	1943	362	158,193	189,258	28,269	3,766	59.7	251,324	99,552	74	..	14	15.9
Boston & Maine	1944	1,795	365,456	402,818	30,234	13,659	67.9	874,076	384,106	149	1	25	14.3
	1943	1,807	402,228	469,684	51,855	14,356	65.8	936,417	398,136	152	..	22	12.6
N. Y., New H. & Hartf.†	1944	1,815	433,193	543,837	56,640	16,707	70.4	992,537	433,094	215	12	31	15.0
	1943	1,815	514,460	610,826	58,385	19,457	69.1	1,184,920	522,511	238	1	34	17.7
Great Lakes Region:													
Delaware & Hudson	1944	846	305,320	375,943	37,439	13,556	68.1	953,021	503,546	127	59	36	16.2
	1943	848	294,053	357,760	29,968	12,288	68.9	838,609	433,237	137	47	34	15.6
Del., Lack. & Western	1944	971	371,336	439,929	76,098	16,056	69.1	1,059,798	503,815	144	25	35	17.2
	1943	971	371,018	448,310	78,226	16,649	69.6	1,085,396	511,907	148	20	36	17.6
Erie	1944	2,244	824,244	873,205	63,492	40,262	67.5	2,603,542	1,159,864	314	32	53	13.3
	1943	2,244	1,030,112	1,117,505	97,790	47,769	66.7	3,121,960	1,402,449	317	1	80	20.1
Grand Trunk Western	1944	1,026	259,088	268,538	1,928	8,466	69.5	530,185	239,932	65	1	10	13.2
	1943	1,026	267,815	279,231	2,305	8,016	69.3	518,139	239,239	68	2	15	17.6
Lehigh Valley	1944	1,247	489,377	544,932	72,691	21,516	63.3	1,514,903	728,830	156	..	11	6.6
	1943	1,248	508,857	566,421	96,584	21,184	60.6	1,510,192	703,449	151	..	16	9.6
New York Central	1944	10,325	3,567,960	3,837,773	245,312	135,822	63.7	9,432,831	4,401,966	1,125	20	245	17.6
	1943	10,326	3,780,802	4,069,531	255,733	141,505	62.6	9,873,674	4,534,689	1,209	9	206	14.5
New York, Chi. & St. L.	1944	1,656	724,143	735,077	10,661	29,685	70.0	1,897,628	875,010	169	21	19	9.1
	1943	1,657	829,584	845,725	10,602	31,783	68.3	2,061,514	947,164	157	..	18	10.3
Pere Marquette	1944	1,915	417,996	429,886	9,900	14,252	68.3	940,302	448,353	144	..	25	14.8
	1943	1,949	441,252	459,602	12,312	14,203	67.5	945,524	449,273	134	1	30	18.2
Pitts. & Lake Erie	1944	229	88,883	94,553	65	3,595	61.4	314,630	182,045	36	1	10	21.3
	1943	230	84,031	88,620	188	3,476	65.4	298,252	177,600	38	3	9	18.0
Wabash	1944	2,381	759,568	781,207	17,825	27,551	71.5	1,771,655	838,444	178	3	36	16.6
	1943	2,381	725,798	746,736	17,437	27,204	72.1	1,727,366	813,205	180	5	38	17.0
Central Eastern Region:													
Baltimore & Ohio	1944	6,093	2,382,887	2,975,913	299,705	82,501	63.7	6,011,126	2,982,766	934	3	230	19.7
	1943	6,111	2,463,825	3,066,597	350,653	85,271	64.7	6,071,989	3,006,196	939	..	189	16.8
Central of New Jersey†	1944	654	220,468	261,367	55,471	8,332	63.3	611,896	310,040	117	14	27	17.1
	1943	655	235,230	272,317	61,081	8,021	62.3	569,093	279,958	133	8	15	9.6
Chicago & Eastern Ill.	1944	912	265,779	270,647	6,791	8,459	62.4	592,532	275,950	73	2	5	6.3
	1943	912	325,875	337,683	12,600	9,892	61.2	695,917	318,585	78	..	7	8.2
Elgin, Joliet & Eastern	1944	392	132,859	136,538	3,646	3,650	62.6	291,320	152,035	61	..	16	20.8
	1943	392	125,833	128,850	2,919	3,495	66.3	274,356	150,269	60	..	16	21.1
Long Island	1944	372	36,464	38,034	17,017	411	57.0	28,764	12,003	46	..	5	9.8
	1943	374	34,645	35,870	14,434	389	56.5	28,338	11,385	39	..	8	17.0
Pennsylvania System	1944	9,872	4,426,213	5,153,811	670,581	172,924	63.9	12,239,485	5,943,650	2,028	..	184	8.3
	1943	9,914	4,415,741	5,168,781	694,018	169,227	64.0	11,981,759	5,798,160	1,976	..	189	8.7
Reading	1944	1,409	580,873	568,754	84,711	18,911	66.4	1,418,638	778,766	269	14	45	13.7
	1943	1,416	535,630	603,293	80,608	16,876	65.4	1,254,230	668,623	284	12	43	12.7
Pocahontas Region:													
Chesapeake & Ohio	1944	3,036	1,074,319	1,161,895	55,362	49,059	56.5	4,255,902	2,411,089	431	19	76	14.4
	1943	3,027	1,027,526	1,109,585	49,238	45,608	57.2	3,903,245	2,224,434	421	1	72	14.6
Norfolk & Western	1944	2,132	739,876	790,588	56,119	34,249	59.3	2,926,389	1,581,499	284	33	15	4.5
	1943	2,132	735,564	784,320	54,946	31,502	58.9	2,722,738	1,484,165	287	17	22	6.7
Southern Region:													
Atlantic Coast Line	1944	4,952	1,088,700	1,103,209	14,755	29,712	64.3	1,967,154	877,052	385	9	26	6.2
	1943	4,947	1,040,902	1,054,888	15,586	28,033	62.3	1,896,864	834,097	358	9	20	5.2
Central of Georgia†	1944	1,783	314,839	324,008	5,098	7,676	71.5	496,598	233,783	87	..	17	16.3
	1943	1,783	329,562	339,290	6,095	7,912	71.0	514,552	243,682	94	..	12	11.3
Gulf, Mobile & Ohio	1944	1,941	297,705	380,101	3,329	10,949	75.6	684,219	332,302	108	3	8	6.7
	1943	1,962	308,579	393,722	2,397	11,329	77.0	715,315	353,605	108	2	14	11.3
Illinois Central (incl. Yazoo & Miss. Vy.)	1944	6,347	1,598,497	1,617,066	29,765	61,338	63.6	4,251,516	1,984,793	647	1	49	7.0
	1943	6,347	1,660,378	1,676,432	30,073	63,023	64.8	4,355,952	2,063,780	606	..	80	11.7
Louisville & Nashville *	1944	4,744	1,554,914	1,685,727	43,363	40,880	65.9	2,882,116	1,504,103	417	10	69	13.9
	1943	4,736	1,547,156	1,685,873	41,707	38,720	64.6	2,740,805	1,394,151	422	3	56	11.6
Seaboard Air Line*	1944	4,161	904,287	967,823	15,018	26,375	68.9	1,720,584	782,706	285	..	53	15.7
	1943	4,167	931,995	1,102,918	17,365	26,232	68.3	1,724,544	785,885	312	..	40	11.4
Southern	1944	6,471	2,099,703	2,142,632	39,982	47,996	70.6	3,028,809	1,409,254	605	..	91	13.1
	1943	6,478	2,068,295	2,117,620	32,088	46,530	69.6	2,971,301	1,375,402	594	..	88	12.9
Northwestern Region:													
Chi. & North Western	1944	8,069	1,045,662	1,090,389	23,682	33,472	65.8	2,274,879	1,037,632	356	10	117	24.2
	1943	8,098	1,042,352	1,090,956	26,184	33,322	68.4	2,224,640	1,082,965	378	16	111	22.0
Chicago Great Western	1944	1,445	277,146	284,660	11,802	9,162	74.0	571,582	258,304	72	..	9	11.1
	1943	1,445	294,851	304,369	17,048	9,643	72.6	617,962	281,630	76	..	8	9.5
Chi., Milw., St. P. & Pac.†	1944	10,715	1,457,558	1,555,536	74,885	52,548	70.4	3,416,255	1,634,641	494	52	71	11.5
	1943	10,734	1,559,827	1,673,062	79,154	52,562	70.2	3,464,446	1,682,264	544	20	68	10.8
Chi., St. P., Minneap. & Om.	1944	1,606	198,004	214,489	12,053	5,392	71.3	349,726	160,752	100	18	17	12.6
	1943	1,606	215,055	229,980	13,093	5,555	67.6	369,531	162,326	95	24	9	7.0
Duluth, Missabe & I. R.	1944	547	79,670	80,035	1,619	3,931	51.9	334,947	195,266	19	9	24	46.2
	1943	543	134,881	135,345	846	6,368	50.5	558,857	325,936	55	..	1	1.8
Great Northern	1944	8,276	1,281,379	1,286,608	55,800	49,139	68.5	3,333,199	1,564,189	415	13	60	12.3
	1943	8,212	1,329,454	1,333,757	53,085	47,617	66.8	3,381,959	1,648,377	409	11	53	11.2
Min., St. P. & S. St. M.	1944	4,259	428,339	441,858	7,287	11,280	62.9	777,439	353,002	131	3	7	5.0
	1943	4,258	487,295	501,975	9,753	12,725	64.6	887,226	420,285	136	3	8	5.4
Northern Pacific	1944	6,571	976,441	1,047,144	80,772	41,457	72.0	2,735,660	1,355,734	373	11	63	14.1
	1943	6,572	1,009,397	1,077,104	81,400	41,364	74.2	2,756,643	1,414,500	376	15	48	10.9
Central Western Region:													
Alton†	1944	915	269,516	288,271	504	7,308	69.2	488,666	231,664	75	..	5	6.3
	1943	915	272,370	287,732	645	7,636	68.1	514,015	279,923	69	..	6	8.0
Atch., Top. & S. Fe (incl. G. C. & S. F. & P. & S. F.)	1944	13,092	3,509,228	3,719,361	210,178	127,253	64.7	8,374,931	3,383,574	868	6	124	12.4
	1943	13,148	3,043,878	3,271,236	209,511	106,059	67.0	7,036,727	2,943,759	819	..	114	12.2
Chi., Burl. & Quincy	1944	8,791	1,484,898	1,560,744	59,337	56,742	66.8	3,872,700	1,822,634	484	..	63	11.5
	1943	8,827	1,491,306	1,565,852	53,835	53,722	67.8	3,631,699	1,721,000	465	..	70	13.1
Chi., Rock I. & Pac.†	1944	7,718	1,365,820	1,437,220	12,629	41,750	67.5	2,737,602	1,235,433	400	..	68	14.5
	1943	7,718	1,261,873	1,325,389	16,205	37,051	68.2	2,442,288	1,107,560	388	..	78	16.7
Denver & R. G. Wn.†	1944	2,388	483,063	543,716	88,947	17,335	79.1	1,065,317	532,838	181	4	38	17.0
	1943	2,405	476,445	561,559	96,150	16,965	75.4	1,065,842	526,086	178	..	39	18.0
Southern Pacific—Pac. Lines	1944	8,188	2,198,804	2,500,447	389,710	90,795	67.8	5,933,046	2,555,231	818	..	138	14.4
	1943	8,194	2,265,833	2,588,632	408,967	96,371	71.0	6,096,785	2,640,311	800	2	140	14.9
Union Pacific	1944	9,782	3,187,079	3,410,128	302,705	121,508	70.6	7,826,783	3,497,811	862	5	65	7.0
	1943	9,798	3,175,662	3,379,563	276,438	117,401	71.6	7,449,170	3,484,687	842	..	70	7.7
Southwestern Region:													
Mo.-Kans.-Texas Lines	1944	3,241	770,323	794,407	12,549	21,625	64.2	1,438,537	653,780	147	..	21	12.5
	1943	3,281	795,906	821,826	14,152	21,888	61.6	1,498,389	672,286	158	..	18	10.2
Missouri Pacific†	1944	7,071	1,658,981	1,730,532	46,226	59,422	65.5	4,072,298	1,870,527	464	..	73	13.6
	1943	7,069	1,835,052	1,923,498	47,236	65,221	66.0	4,420,940	2,062,966	489	1	61	11.1
Texas & Pacific	1944	1,882	405,232	405,232	8,471	13,646	66.4	892,803	375,488	126	13	17	10.9
	1943	1,882	407,452	407,452	6,090	13,512	67.6	880,629	388,044	115	15	12	8.5
St. Louis-San Francisco†	1944	4,616	1,111,849	1,190,742	26,878	27,453	68.3	1,807,833	838,568	326	..	24	6.9
	1943	4,635	1,067,196	1,130,655	24,601	25,812	65.1	1,744,813	793,059	335	..	28	7.7
St. Louis-San Fran. & Texas	1944	159	31,620	32,381	6	479	71.0	30,571	13,552	7	..	1	12.5
	1943	159	35,207	35,884	18	542	68.3	35,595	15,639	10	..	..	..
St. Louis Southw. Lines†	1944	1,600	478,863	487,725	6,610	18,653	72.8	1,143,134	531,090	116	3	22	15.6
	1943	1,600	555,631	571,814	8,038	19,040	68.6	1,211,174	523,983	117	2	22	15.6
Texas & New Orleans	1944	4,333	1,171,801	1,175,772	30,251	30,690	66.7	2,044,397	913,821	255	..	27	9.6
	1943	4,339	1,234,469	1,250,053	33,495	33,660	64.4	2,294,917	1,013,152	264	..	22	7.7

* Report of receivers.
† Report of trustee or trustees.

Items for the Month of November 1944 Compared with November 1943

Region, road and year		Freight cars on line: Home	Foreign	Total	Per Cent B. O.	G.t.m. per train-hr. excl. locos. and tenders	G.t.m. per train-mi. excl. locos. and tenders	Net ton-mi. per train-mile	Net ton-mi. per l'd. car-mile	Net ton-mi. per car-day	Car miles per car-day	Net daily ton-mi. per road-mi.	Coal lb. per 1000 g.t.m. inc. loco.	Mi. per loco. per day
New England Region:														
Boston & Albany	1944	322	5,762	6,084	0.2	24,081	1,662	683	27.2	646	38.4	11,250	195	95.8
	1943	356	5,583	5,939	0.3	22,677	1,597	632	26.4	568	36.0	9,167	209	91.9
Boston & Maine	1944	2,356	10,891	13,247	3.1	37,463	2,399	1,054	28.1	953	49.9	7,133	102	87.3
	1943	2,276	11,171	13,447	2.5	35,704	2,339	994	27.7	1,009	55.3	7,344	95	104.0
N. Y., New H. & Hartf.†	1944	2,615	20,410	23,025	2.8	33,065	2,320	1,012	25.9	642	35.2	7,954	101	79.7
	1943	3,200	23,358	26,558	2.3	33,465	2,338	1,031	26.9	661	35.6	9,596	101	88.9
Great Lakes Region:														
Delaware & Hudson	1944	3,057	5,442	8,499	3.6	53,510	3,139	1,659	37.1	1,819	71.9	19,840	108	65.4
	1943	3,957	5,741	9,698	2.3	47,280	2,867	1,481	35.3	1,547	63.7	17,030	111	61.5
Del., Lack. & Western	1944	5,672	13,837	19,509	3.2	41,649	2,878	1,368	31.4	900	41.5	17,295	126	91.4
	1943	6,020	12,399	18,419	2.9	43,717	2,974	1,403	30.7	924	43.1	17,573	123	92.5
Erie	1944	9,720	25,939	35,659	2.8	51,861	3,178	1,416	28.8	1,084	55.7	17,229	99	85.5
	1943	10,416	27,758	38,174	2.2	50,383	3,044	1,367	29.4	1,249	63.8	20,833	97	108.6
Grand Trunk Western	1944	2,963	7,011	9,974	3.4	42,172	2,063	934	28.3	820	41.6	7,795	88	128.4
	1943	2,155	6,416	8,571	3.7	41,132	1,943	897	29.8	1,022	49.4	7,773	94	120.4
Lehigh Valley	1944	6,612	21,752	28,364	1.8	51,822	3,186	1,533	33.9	907	42.3	19,482	112	129.0
	1943	6,703	18,881	25,584	1.7	50,498	3,041	1,416	33.2	878	43.6	18,789	113	142.7
New York Central	1944	44,227	91,870	136,097	3.4	41,756	2,673	1,247	32.4	1,038	50.3	14,211	106	108.3
	1943	48,753	102,376	151,129	2.7	41,539	2,647	1,216	32.0	1,006	50.1	14,638	107	111.5
New York, Chi. & St. L.	1944	2,346	13,397	15,743	2.4	48,802	2,637	1,216	29.5	1,835	89.0	17,613	89	125.2
	1943	3,550	13,041	16,591	2.0	46,530	2,509	1,153	29.8	1,872	91.9	19,054	91	171.0
Pere Marquette	1944	2,516	9,534	12,050	2.1	39,124	2,263	1,079	31.5	1,218	56.7	7,804	97	94.4
	1943	2,708	9,766	12,474	1.8	37,449	2,184	1,038	31.6	1,214	56.9	7,684	94	104.1
Pitts. & Lake Erie	1944	3,651	9,181	12,832	4.1	47,448	3,540	2,048	50.6	480	15.5	26,499	101	75.2
	1943	4,962	9,418	14,380	3.2	47,889	3,554	2,116	51.1	454	13.6	25,739	97	66.5
Wabash	1944	5,839	11,947	17,786	3.9	45,295	2,359	1,117	30.4	1,431	65.7	11,738	110	128.0
	1943	5,536	11,009	16,545	2.2	45,457	2,409	1,134	29.9	1,502	69.7	11,385	112	119.1
Central Eastern Region:														
Baltimore & Ohio	1944	40,858	56,179	97,037	3.2	29,626	2,575	1,278	36.2	991	43.0	16,318	154	98.0
	1943	40,150	62,418	102,568	2.3	30,416	2,523	1,249	35.3	996	43.6	16,398	153	104.7
Central of New Jersey†	1944	4,140	15,809	19,949	3.2	32,985	2,783	1,410	37.2	525	22.3	15,802	129	88.1
	1943	4,325	21,933	26,258	1.8	28,638	2,451	1,206	34.9	361	16.6	14,247	143	98.2
Chicago & Eastern Ill.	1944	2,219	4,707	6,926	4.7	38,159	2,291	1,067	32.6	1,392	68.3	10,086	113	117.9
	1943	1,977	5,767	7,744	3.4	36,621	2,231	1,021	32.2	1,446	73.3	11,644	120	142.7
Elgin, Joliet & Eastern	1944	8,864	6,834	15,698	2.2	17,931	2,333	1,217	41.7	327	12.5	12,928	142	87.2
	1943	8,933	7,524	16,457	3.4	17,037	2,281	1,249	43.0	314	11.0	12,778	144	84.9
Long Island	1944	38	6,026	6,064	.4	6,805	807	337	29.2	68	4.1	1,076	310	51.3
	1943	40	5,013	5,053	.4	6,746	837	336	29.3	76	4.6	1,015	312	50.3
Pennsylvania System	1944	120,390	123,453	243,843	3.3	38,045	2,849	1,383	34.4	829	37.8	20,069	127	95.1
	1943	116,700	124,815	241,515	3.1	36,805	2,796	1,353	34.3	802	36.6	19,495	127	97.6
Reading	1944	12,706	25,646	38,352	2.0	30,177	2,445	1,342	41.2	672	24.6	18,424	130	86.0
	1943	11,078	25,087	36,165	1.6	28,880	2,350	1,253	39.6	631	24.4	15,740	131	79.0
Pocahontas Region:														
Chesapeake & Ohio	1944	38,603	14,200	52,803	1.5	56,109	4,014	2,274	49.1	1,498	54.0	26,472	80	85.2
	1943	35,772	18,097	53,869	.6	52,221	3,878	2,210	48.8	1,330	47.6	24,495	82	85.7
Norfolk & Western	1944	31,548	6,880	38,428	1.3	61,538	4,011	2,168	46.2	1,345	49.1	24,726	95	92.2
	1943	31,364	7,249	38,613	1.5	58,999	3,791	2,066	47.1	1,297	46.7	23,205	97	92.1
Southern Region:														
Atlantic Coast Line	1944	8,382	21,169	29,551	1.5	29,758	1,816	809	29.5	983	51.8	5,904	108	94.5
	1943	8,255	21,652	29,907	2.9	30,007	1,828	804	29.8	980	52.8	5,620	112	97.5
Central of Georgia†	1944	1,977	6,600	8,577	1.5	29,031	1,585	746	30.5	895	41.1	4,371	137	111.4
	1943	2,450	6,487	8,937	1.6	28,796	1,577	747	30.8	939	42.9	4,556	126	113.2
Gulf, Mobile & Ohio	1944	1,853	8,215	10,068	.7	38,810	2,305	1,119	30.3	1,162	50.7	5,707	117	113.8
	1943	2,259	7,415	9,674	1.0	41,162	2,327	1,150	31.2	1,309	54.4	6,008	118	112.1
Illinois Central (incl. Yazoo & Miss. Vy.)	1944	20,141	35,447	55,588	1.0	42,144	2,728	1,274	32.4	1,209	58.7	10,424	122	82.0
	1943	18,371	31,829	50,200	1.0	43,127	2,696	1,277	32.7	1,311	61.8	10,839	121	86.8
Louisville & Nashville	1944	29,439	14,394	43,833	3.5	29,150	1,854	967	36.8	1,138	46.9	10,568	132	123.6
	1943	28,915	15,576	44,491	2.0	26,730	1,772	901	36.0	1,039	44.7	9,812	136	125.8
Seaboard Air Line*	1944	6,317	18,505	24,822	1.9	32,762	1,949	886	29.7	1,048	51.3	6,270	121	106.1
	1943	6,876	19,156	26,032	1.4	31,132	1,900	866	30.0	1,050	51.4	6,287	119	116.6
Southern	1944	15,720	34,434	50,154	2.5	23,637	1,464	681	29.4	922	44.5	7,259	153	110.5
	1943	16,224	29,473	45,697	2.1	24,900	1,461	676	29.6	989	48.1	7,077	151	110.4
Northwestern Region:														
Chi. & North Western	1944	21,533	31,075	52,608	4.1	34,437	2,254	1,028	31.0	648	31.8	4,286	127	82.5
	1943	21,207	29,454	50,661	3.3	33,785	2,203	1,073	32.5	699	31.5	4,458	128	79.2
Chicago Great Western	1944	849	4,369	5,218	1.6	36,302	2,074	937	28.2	1,538	73.7	5,959	129	128.8
	1943	938	4,495	5,433	1.3	37,479	2,105	959	29.2	1,640	77.4	6,497	125	137.0
Chi., Milw., St. P. & Pac.†	1944	22,352	29,237	51,589	2.0	38,061	2,363	1,130	31.1	1,054	48.1	5,085	119	95.8
	1943	22,102	28,527	50,629	1.4	34,052	2,235	1,085	32.0	1,063	47.3	5,224	128	101.2
Chi., St. P., Minneap. & Om.	1944	795	6,118	6,913	5.3	25,481	1,803	829	29.8	755	35.5	3,336	113	60.1
	1943	1,072	6,989	8,061	4.9	24,532	1,757	772	29.2	636	32.2	3,369	120	66.9
Duluth, Missabe & I. R.	1944	15,166	252	15,418	3.1	72,468	4,344	2,532	49.7	422	16.4	11,899	71	59.6
	1943	15,113	290	15,403	3.0	75,135	4,269	2,490	51.2	706	27.3	20,008	73	85.2
Great Northern	1944	20,852	20,344	41,196	1.5	38,587	2,619	1,229	31.8	1,211	55.5	6,300	110	98.1
	1943	22,533	19,866	42,399	2.0	38,443	2,571	1,253	34.6	1,209	52.2	6,691	106	106.1
Min., St. P. & S. St. M.	1944	5,747	7,823	13,570	2.8	32,451	1,822	827	31.3	886	45.0	2,763	100	109.5
	1943	6,505	6,346	12,851	3.6	31,899	1,854	878	33.0	1,045	49.0	3,290	97	122.2
Northern Pacific	1944	14,247	20,479	34,726	2.4	41,779	2,814	1,394	32.7	1,299	55.2	6,877	137	90.6
	1943	16,406	17,120	33,526	3.1	41,311	2,749	1,411	34.2	1,340	52.8	7,174	136	95.3
Central Western Region:														
Alton†	1944	1,195	7,405	8,600	2.2	38,150	1,829	867	31.7	910	41.5	8,440	121	128.3
	1943	877	7,053	7,930	2.4	40,621	1,909	1,040	36.7	1,171	46.9	10,198	124	135.1
Atch., Top. & S. Fe (incl. G. C. & S. F. & P. & S. F.)	1944	41,267	60,391	101,658	2.0	41,936	2,405	972	26.6	1,154	67.1	8,615	117	138.2
	1943	43,651	44,797	88,448	2.4	39,387	2,329	974	27.8	1,105	59.5	7,463	121	130.6
Chi., Burl. & Quincy	1944	16,375	33,371	49,746	2.1	40,892	2,621	1,234	32.1	1,207	56.2	6,911	119	105.5
	1943	15,003	27,460	42,463	1.9	38,766	2,450	1,161	32.0	1,322	60.9	6,499	108	106.1
Chi., Rock I. & Pac.†	1944	9,949	24,147	34,096	3.7	35,102	2,023	913	29.6	1,185	59.1	5,536	113	107.9
	1943	11,414	20,145	31,559	2.3	33,492	1,944	882	29.9	1,135	55.6	4,783	120	101.1
Denver & R. G. Wn.†	1944	7,500	9,182	16,682	3.6	31,712	2,240	1,120	30.7	1,033	42.5	7,438	181	101.4
	1943	8,228	9,193	17,421	2.7	30,080	2,273	1,122	31.0	971	41.5	7,292	184	104.2
Southern Pacific—Pac. Lines	1944	24,343	63,857	88,200	2.3	35,572	2,722	1,172	28.1	981	51.4	10,402	108	105.7
	1943	25,977	63,222	89,199	2.2	36,402	2,713	1,175	27.4	986	50.6	10,741	106	112.0
Union Pacific	1944	26,046	45,500	71,546	2.3	46,090	2,481	1,109	28.8	1,581	77.9	11,919	128	137.1
	1943	26,820	43,522	70,342	2.1	43,138	2,377	1,112	29.7	1,604	75.5	11,855	127	140.6
Southwestern Region:														
Mo.-Kans.-Texas Lines	1944	1,335	8,221	9,556	0.5	33,701	1,875	852	30.2	2,159	111.2	6,724	84	165.5
	1943	2,316	7,299	9,615	1.3	34,517	1,889	848	30.7	2,195	115.9	6,830	87	167.4
Missouri Pacific†	1944	11,881	28,907	40,788	1.3	39,938	2,469	1,134	31.5	1,562	75.8	8,818	108	116.8
	1943	10,319	32,249	42,568	1.2	41,420	2,420	1,129	31.6	1,601	76.6	9,728	111	126.9
Texas & Pacific	1944	1,622	7,097	8,719	1.5	38,634	2,214	931	27.5	1,392	76.2	6,651	93	96.4
	1943	1,778	7,056	8,834	.8	37,392	2,188	964	28.7	1,487	76.6	6,873	92	104.9
St. Louis-San Francisco†	1944	6,643	13,772	20,415	1.8	31,750	1,635	759	30.5	1,412	67.7	6,056	139	121.2
	1943	7,494	11,470	18,964	2.0	31,561	1,642	746	30.7	1,371	68.6	5,703	138	110.9
St. Louis-San Fran. & Texas	1944	....	240	240	3.3	20,139	973	431	28.3	1,859	92.6	2,841	131	137.0
	1943	....	347	347	9.2	21,482	1,016	446	28.9	1,704	86.5	3,279	126	115.7
St. Louis Southw. Lines†	1944	1,029	7,825	8,854	1.3	38,083	2,391	1,111	28.5	1,988	95.9	11,064	83	123.9
	1943	1,138	7,100	8,238	.7	33,495	2,190	948	27.5	2,143	113.5	10,916	87	144.9
Texas & New Orleans	1944	2,627	17,963	21,590	2.6	30,327	1,762	788	29.8	1,404	70.6	7,030	95	148.1
	1943	4,022	22,179	26,201	1.6	31,091	1,880	830	30.1	1,323	68.2	7,783	91	156.9

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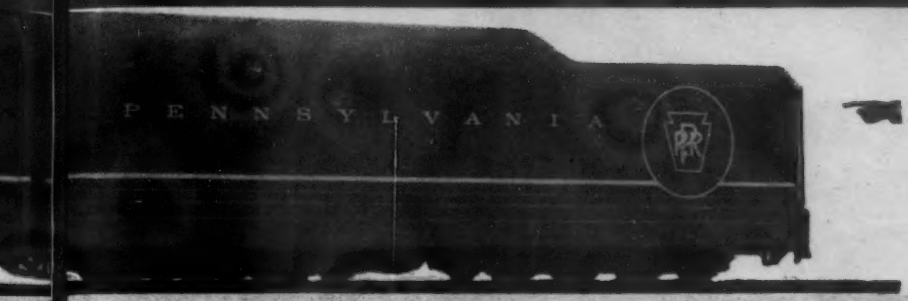

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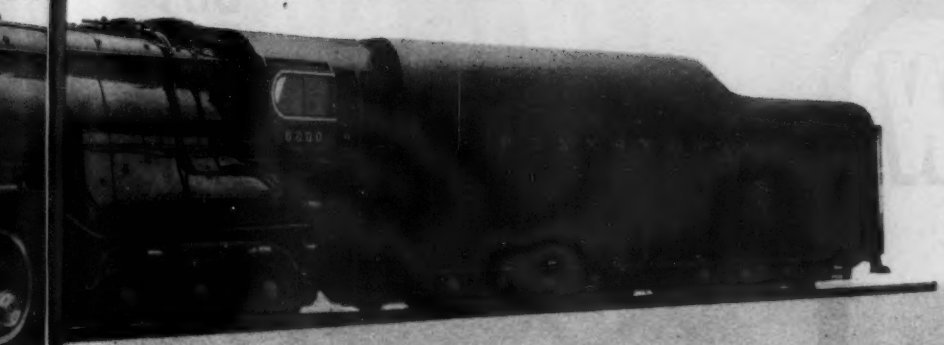

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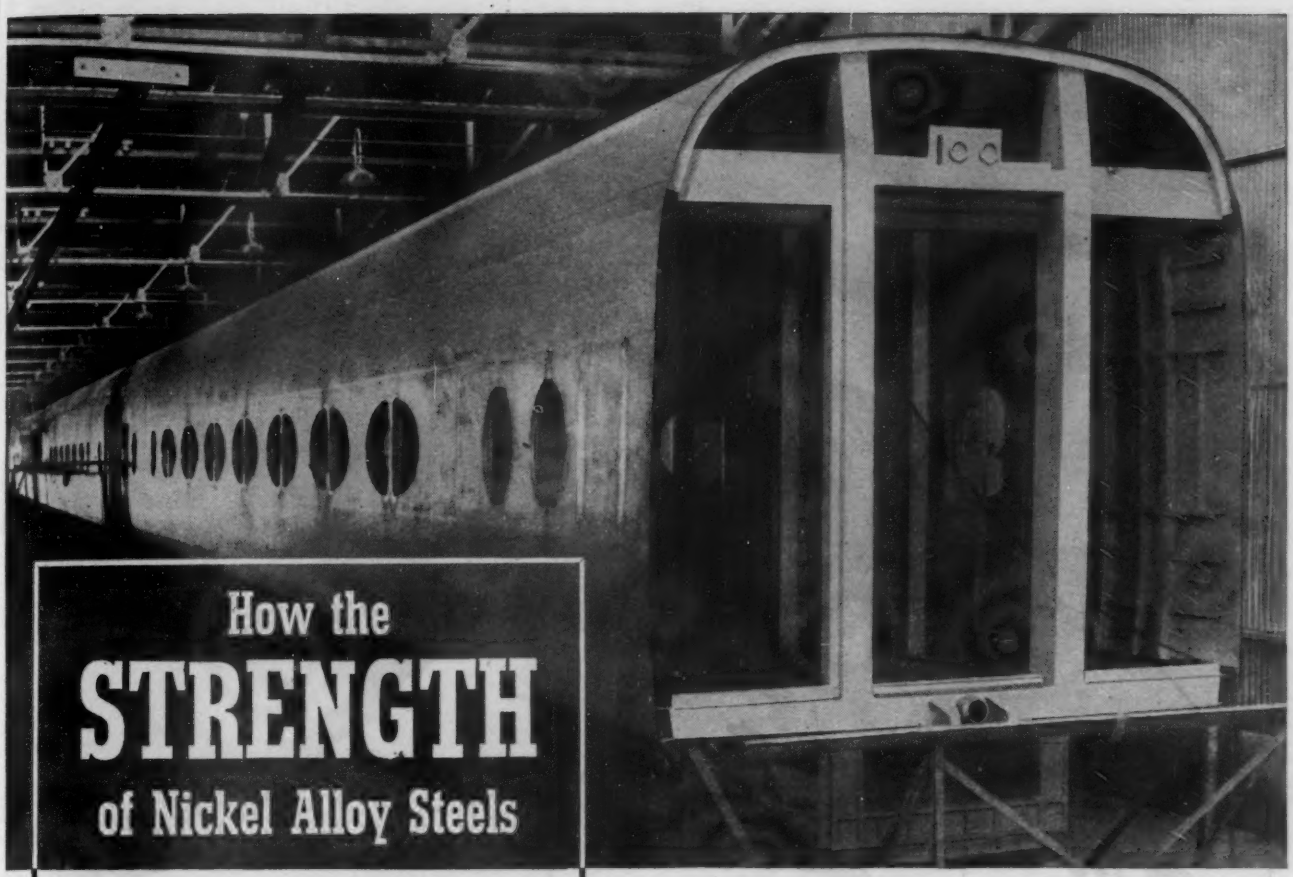

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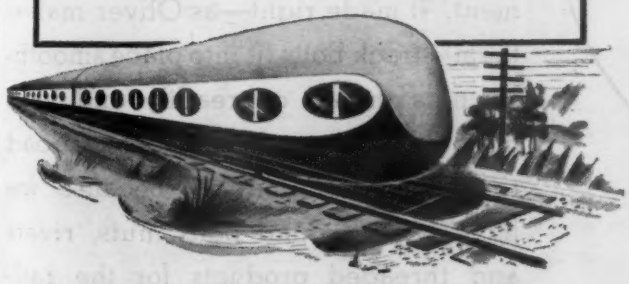

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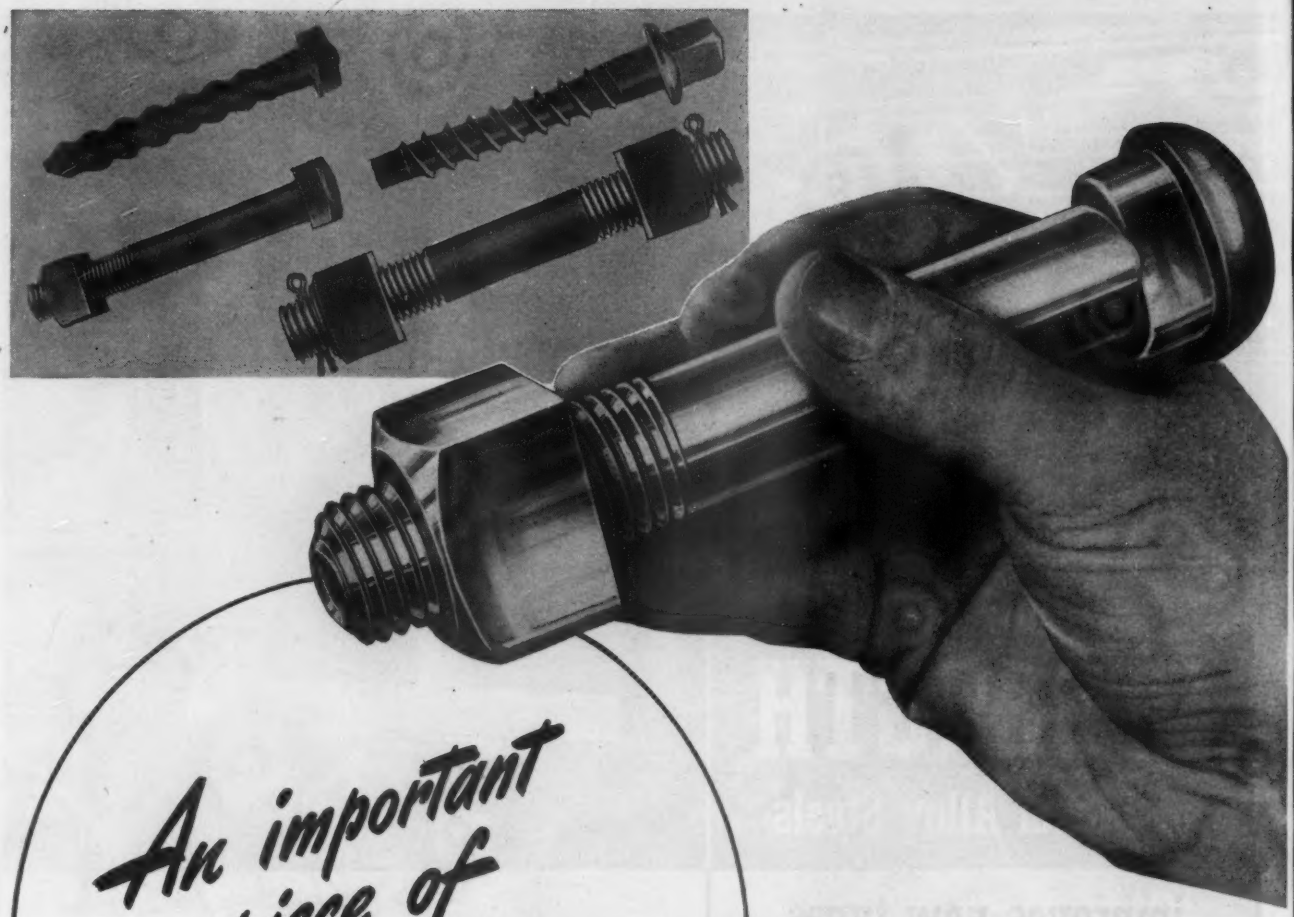

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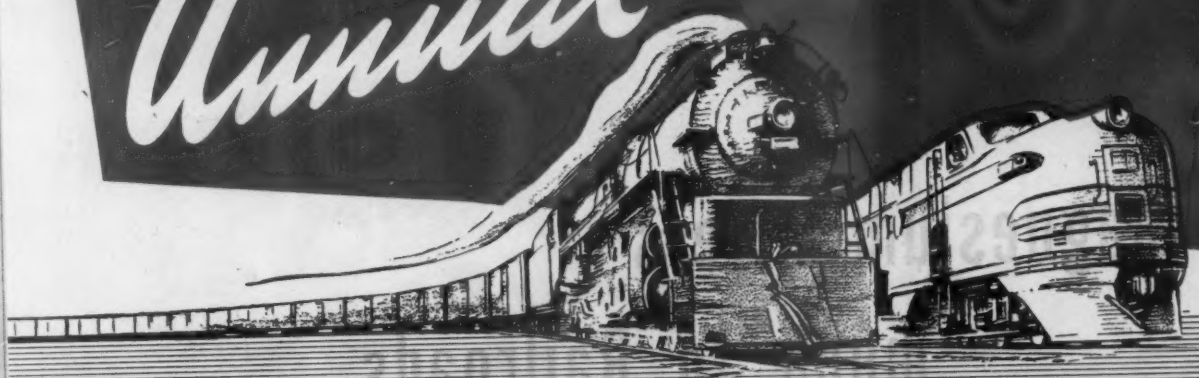

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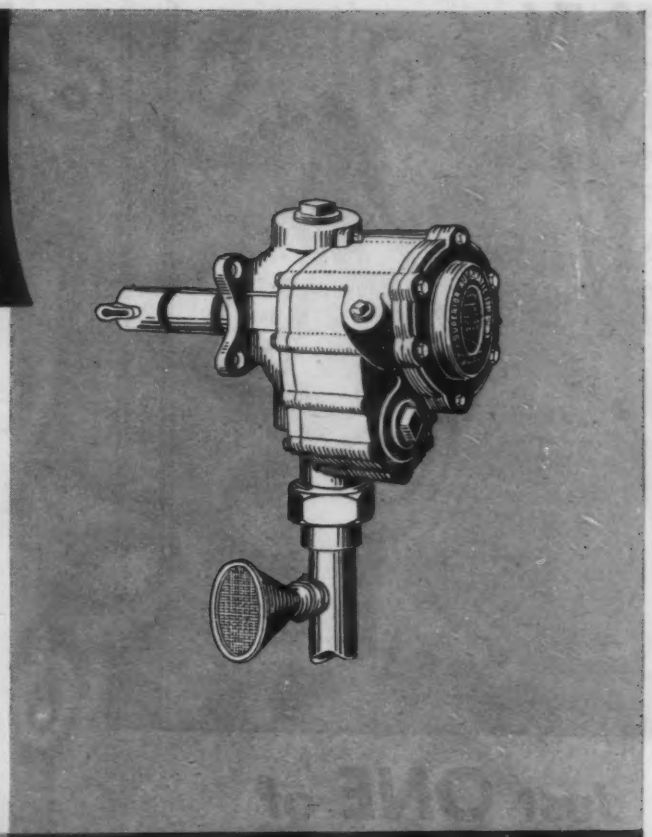
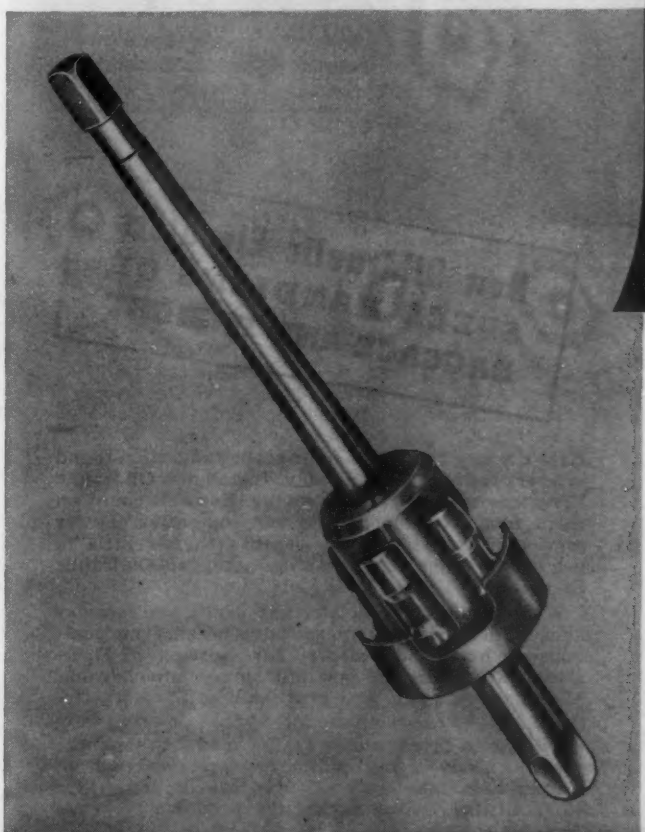
FLUE BLOWER



Locomotives equipped with Superior Automatic Flue Blowers may be kept in continuous service between monthly inspections. That means longer hauls, heavier loads, more economical operation. It means valuable contribution to the nation's transportation problem. By keeping flues and flue sheets clean there is no loss of motive power. And no "down time" for hand cleaning.

Write for literature



SUPERIOR
3-WAY
FLUE ROLLER

This convenient tool sets the record for time-saving and efficiency. In less than a fourth of the time formerly required for the job, the 3-Way Flue Roller in one operation, roll-expands the tube in the sheet, forms a prosser on the water side and flares the end of the tube ready for beading or welding. The rolling action assures even expansion, a tight joint and correctly formed contours.

Literature upon request

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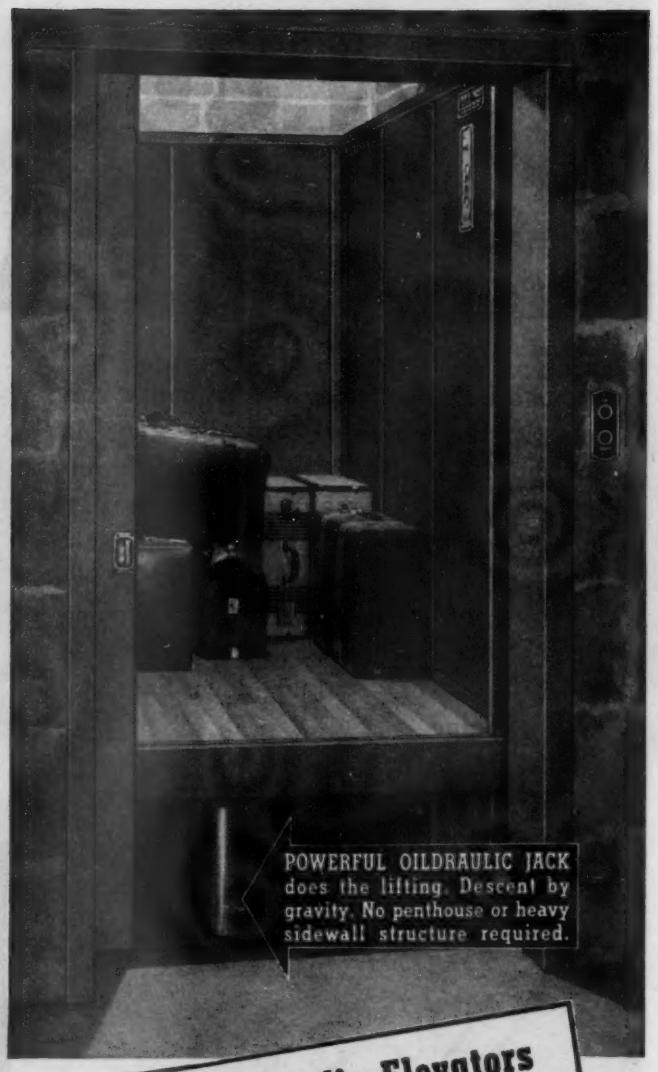
Bulletin 1989 classifies and illustrates the Blaw-Knox buckets most widely used by railroads—from ash pits to river-rail transfers. Your request will bring a copy by return mail.



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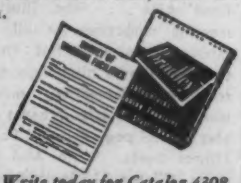

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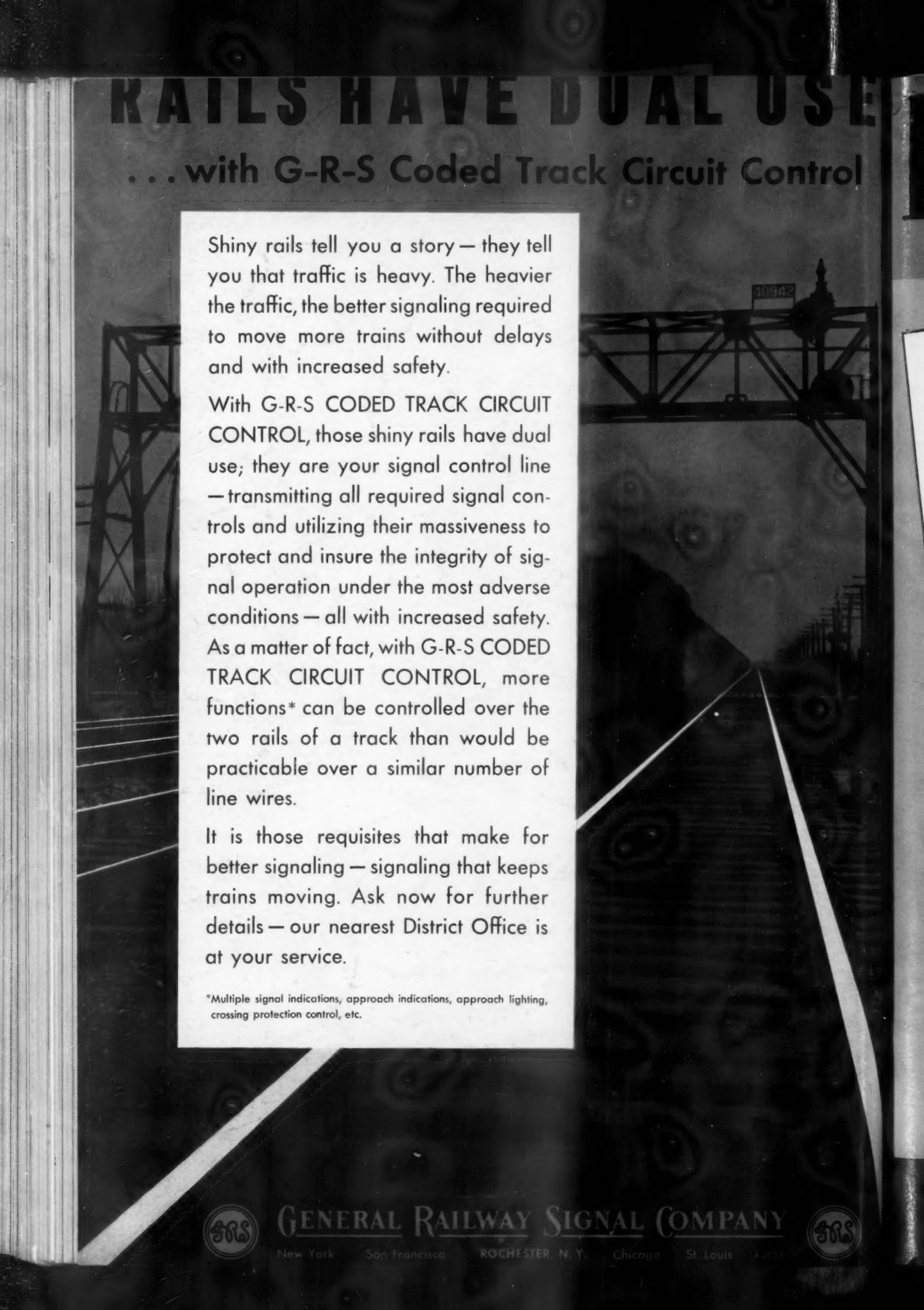
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